2004

A study into the utilization of value-added services in commercial printing companies

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A Study into the Utilization of Value-Added Services in Commercial Printing Companies

By

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A thesis submitted in partial fulfillment of the
requirements for the degree of Master of Science in the
School of Print Media in the College of Imaging Arts and Sciences
of Rochester Institute of Technology

October 2004

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Certificate of Approval

Master's Thesis

This is to certify that the Master's Thesis of

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Acknowledgements

I would like to thank the following people for their contribution to this thesis:

My primary thesis advisor, Dr Twyla Cummings, for her support throughout the duration of this research. None of this would have been possible without her dedication, encouragement and understanding. Her boundless patience and prompt feedback has kept me on track.

My secondary advisor, Dr Franziska Frey, for her innovative ideas and thoughts – showing me the light at the end of the tunnel.

Svetlana Dolinskiy, my peer advisor and best friend, for all the good times we shared, inspiration and her continuous support – thanks for always being there.

Dipesh Morar, my special friend, for being there each and every day, encouraging and supporting me when needed the most.

Vivek Shah, my roomate and close friend, for always being there.

To all my classmates, for their encouragement, confidence and believing in me.

Finally, to my parents, thank you for never doubting me, even in times when I doubted myself – I love you both very much.

I acknowledge that all references are accurately recorded and that, unless otherwise stated, all work contained herein is my own.

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Kalpana Chhita

Table of Contents

List of Tables

List of Figures

Abstract

Today's printing industry is in a state of transition. It has become an industry that no longer solely relies on print for sustainability. Thus, printers as well as print service providers are incorporating different strategies into their business models to provide the types of services that customers now require in order to achieve their own business goals (Cummings and Chhita, 2004).

This research was conducted in an effort to better understand the impact of these emerging trends. The primary objectives were:

1) to clearly understand the changing business dynamics in the printing industry,

2) to determine whether there is a positive correlation between the number of value-added services being offered and company size,

3) to determine the degree to which fulfillment is offered as a value-added service, and

4) to add to the current base of research on this very important topic.

The research sample consisted of databases from the Finishing Resources Inc. and the Binding Industries of America (BIA) databases. Finishing Resources Inc. has 980 members, which are comprised of commercial printers (74.5%) and trade finishers (25.5%). BIA has 115 members, of which 50% are trade finishers and 50% are equipment suppliers. The survey, which was administered via the Internet, consisted of five sections:

1) demographic profile,

2) industry business trends in finishing and distribution,

3) value-added services,

4) fulfillment services, and

5) comments.

This thesis is concerned with sections one (demographic profile), three (value-added services) and five (comments).

Analysis of the research data revealed key findings, summarized as follows:

- Most conventional commercial companies also offer digital printing.
- There is no positive correlation between the size of the company in terms of the number of employees and the number of value-added services offered.
- E-commerce and fulfillment appear to be the most frequent value-added services offered among conventional commercial printers and digital commercial printers.
- The majority companies offered fulfillment in-house as a value-added service.

Significant opportunities still remain for future research within various aspects of this research. Two specific areas include adopted profit models as well as a more in-depth study of value-added services probability related to current distribution workflow processes.

Chapter 1

Introduction

Statement of Problem

According to GATF (2003), printing is America's largest manufacturing industry with over 44,000 printing plants, providing 1,1 million jobs and producing over $157 billion in printed products and services annually. However, despite being around for over 550 years, printers are being forced to re-evaluate the profitability of their core businesses (Alexander, 2003). In 2002, the print industry witnessed its deepest decline in real print activity in the past three decades. Between 1999 and 2001, over 21,000 presses (12%) have become obsolete, resulting from inefficient demand (Alexander, 2003).

As a result of these economic trends, printers are incorporating a differentiated value-added strategy into their business models in order to provide the desired services that customers now require to meet their own business goals (GATF/PIA, 2004, p.22). As such, offering value-added or diversified services has become a trend in the printing industry. The benefit of offering value-added services from company to company is still to be determined. Why are companies offering them? How are these services being incorporated into their current workflow? How are they benefiting from offering those services? How are

customers benefiting from being offered these services? These are some questions that will be explored in order to determine the true benefits of offering diversified services.

Background and Significance

According to NAPL (2004b, p.6), it is evident that all the technology required to eliminate the use of print completely has already been invented. It is simply a matter of time until these technologies find practical, widely accepted use within the market (NAPL, 2004a, p.6). The graphic communications industry is undergoing a transition from a commercial activity to one with technology also centered in the consumer arena and in the office (Mason, 2004). Recent developments in the industry are focused on standardization, automation and scalability, such as JDF and XML. The primary goal of such technologies is super-efficient workflows that are intended to shorten delivery time as well as reduce the transactional cost of print (Riell, 2004, p.24). While such developments have been beneficial to our industry, they alone cannot guarantee success (Riell, 2004, p.14).

The printing industry has traditionally viewed press production as the heart of its business (Sarkans, 2001, p.73). However, market trends such as consumer behavior and overcapacity in the print industry have decreased the ink-on-paper aspect of many printed products to commodity status. Thus, in the commercial printing industry, the ability to add value with press capabilities has gradually

declined (Sarkans, 2001, p.73). Simultaneously, opportunities to add value by offering various other print-related services have increased and proven to be more profitable than printing (Sarkans, 2001, p.73). Alexander (2003) suggests that in order to be successful, a printer must build value-added services other than print into their business model. This is reinforced by TrendWatch (2004a), which suggests that value-added services are becoming the lifeblood of the commercial printing business, both in terms of profitability and customer relationships. Service diversification can occur before the print run (such as design and photography), after the print run (such as fulfillment, mailing services, document management and CD services), or as overall enhancements (such as variable data, web services and facilities management) (Alexander, 2003). Printers who have not adapted their business models to current industry trends are being faced with constant price pressure, competition and commoditization (Riell, 2004, p.24).

Reasons for Interest

Economic developments and competition resulting from evolving consumer behavior and knowledge has forced companies to redefine themselves in order to remain competitive and survive within the printing industry. Although technology has improved production, print has become merely a commodity that through globalization can be bought from anywhere, at any time, and for any price. Consequently, print providers are looking for ways that they can embrace

the technology evolution and benefit from it by offering services that will ultimately increase customer satisfaction and improve competitiveness.

Previously, there were many providers within the value chain. For example, a company other than the print provider carried out finishing operations. Then, once the product was complete, it was delivered to a fulfillment house, where mailing and distribution would take place, independent of the finishing house and print provider. This not only increased turnaround time, but also affected quality, costs and the communication process. Currently, the ultimate goal of print providers is to provide customers with one-stop shopping, creating an efficient and effective value chain that benefits both print provider and customer.

The industry is metamorphosing from a commodity-offering industry to one that is service-oriented. Without understanding one's customer, offering a commodity such as print in this highly competitive industry is impossible. Thus, understanding the industry as well as knowing one's customer are key to becoming a profitable solutions provider in the graphic communications industry.

This thesis will evaluate and discuss value-added services offered within the commercial print industry. It will attempt to scrutinize the types of services currently being offered, whether they are in-house or outsourced, and ultimately whether offering them is beneficial or not.

Chapter 2

Literature Review

The printing industry, also referred to as the graphic arts industry or graphic communications industry, is America's largest manufacturing industry (GATF, 2003). Birkenshaw, (2002) state that printing is a very broad industry categorization with a few large groups, and that some printers are integrated with publishers, but the majority of the companies are tiny operations.
According to GATF (2003), the printing industry is comprised of over 44,000 printing plants, annually providing 1.1 million jobs and producing over $157 billion in printed products and services annually.

Graphic communications can be defined as the processes and industries that create, develop, produce and disseminate products utilizing or incorporating words or pictorial images to convey information, ideas, and feelings (Wilson, Gentile and GATF Staff, 2002). Davis (2004, p.6), in agreement, elaborately defines print as multiple types of media that can be used to communicate or store information (i.e. textbooks, newspapers, directories); process and track transactions (i.e. checks, forms, billing statements); protect, package, and label products (i.e. labels, wrappers, and packaging); and market, promote, and sell products (i.e. circulars, inserts, direct mail).

Various techniques can be used to manufacture print products. All of these techniques fall into three primary categories: prepress, press and postpress. Prepress is the first step required, incorporating procedures such as preparing text and images for output (Wilson, Gentile and GATF Staff, 2002). Press involves the actual reproduction of the text and images prepared during prepress. Finally, postpress is the phase in which printed matter is converted into a finished product using processes such as binding, finishing and distribution (Wilson, Gentile and GATF Staff, 2002).

Printing Technologies

Current printing technologies are based on a wealth of inventions made in the engineering sciences, information technology, physics, and chemistry fields (Kipphan, 2001, p.40). Heckelman (1996) states that it is only natural to build better technology and more efficient processes to accomplish tasks. In recent years, computers and information technology have made a continuous impact (Kipphan, 2001, p.40).

Printing technologies can be categorized as conventional printing or non-impact printing. Conventional printing refers to printing that requires a master or a printing plate that serves as the print-carrying medium (Kipphan, 2001, p.41), while non-impact printing refer to those technologies that do not require a printing plate *(Refer to Appendix A for the types of printing technologies)* (Kipphan, 2001,

p.11). Kipphan (2001) states that there are five major traditional printing processes: relief printing (letterpress, flexography), planographic (offset lithography), recess printing (gravure/intaglio), stencil printing (screen), and digital printing (toner and inkjet).

According to Romano (2002), the majority of printed products are manufactured using offset technology, followed by an increasing use of digital technology. With continuous developments in flexographic technologies, flexography is increasingly gaining market share, especially in the packaging industry. Gravure is still used for long runs in packaging and commercial print markets. Figure 1 represents the distribution of processes employed in the printing industry.

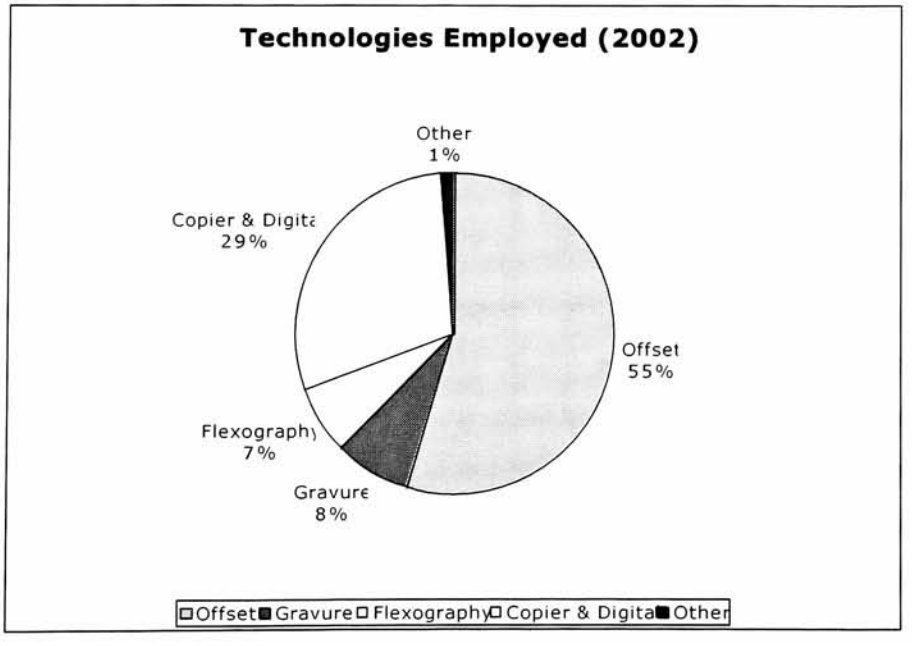

Figure 1. Technology Employed (2002) (Romano, 2002).

Industry Outlook

The Economy

The printing industry is among the top ten manufacturing industries in the nation (Wilson, Gentile and GATF Staff, 2002, p.3). GATF (2003) suggests that the graphic communications industry is inseparably bound to the infrastructure of the total economy. Historically, the industry has grown and declined along with the economy as a whole. However, the economic situation cannot be viewed in isolation, since other international factors also influence the economy as well as various industries. According to GATF (2003), several factors influence economic growth, such as interest rates, inflation, sales slump in key industries, the dollar value based on international influences such as Middle East oil prices, and imports/exports (GATF, 2003).

According to Davis (2004, p.5), the 2001-2002 recessions significantly altered the structure of the industry in terms of the number of printing plants and employees. The industry landscape is littered with the tombstones of companies that failed to move with the markets they served Mason (2004, p.13). Between 1991 and 2002, the total number of U.S. printing plants declined from 49,410 to 45,181, and employment declined by approximately 60,000 (Davis, 2004, p.5). Printers in the top 25% of profitability, defined as *profit leaders,* have had a slight increase in profits, to 8.4% in 2004 as compared to 8.0% in 2002 (Davis, 2004, p.6).

The U.S. economy came back strong in 2003 and appears poised for a healthy 2004 based on total output growth, inflation, and productivity. The economy is expected to grow above trend rates this year (2004) in excess of 3.5%. Besides the growing economy, the Olympics and presidential elections should add growth to the printing markets as a result of extensive marketing and advertising campaigns (Davis, 2004, p.6). The most robust growth is expected in direct marketing printing such as direct mail, catalogs and inserts. This growth trend in the direct mail market was evident since the eighties. Between 1979 and 1989 the number of direct mail pieces grew 13% per year (Alexandria, 2003).

Sector	Percent (2004)
Direct Marketing	3-4%
General Commercial/Quick Printing	3-3.5%
Books	2.5-3%
Packaging/Labels and Wrappers	2.5-3%
Magazines and Periodicals	2-3%
Directories	1-2%
Business Forms	-3-5%

Table 1. 2004 Outlook by Print Sector – Projected Positive Change in Printers' Shipments (Davis, 2004, p.6).

Although it is evident that the economy is showing improvement, some printers believe that as the economy goes, so goes their businesses (Evans, 2003, p.23). According to Naselli (2004), this evidence is strong. Trend after trend indicates

that the economy rebound is not going to significantly help printing companies increase sales (Evans, 2003). Instead, printers and vendors will need to change their business models to reflect the needs of today's new business environment. Simply producing print products at the lowest reasonable unit price is going to prove inadequate to sustain business (Birkenshaw, 2002, p.31). TrendWatch (2004) suggests that printers need to familiarize themselves with digital printing, short-run color, personalization, value-added services, cross media, CIM, JDF and CIP4. It will become indispensable for companies to develop new product and service offerings, and hence, new revenue streams (Birkenshaw, 2002, p.31).

Costs and Profits

According to GATF (2003), the primary concerns relative to costs and profits were material costs, volume, market competition, government regulation and converting costs. Printers' operating costs have coincided overall with the slowing economy and slumping print markets. Salary and wage rates have increased approximately 2%, and overall employment levels have declined (Davis, 2004, p.6). All consumable and raw material prices, such as paper prices, have been relatively stable, and this is expected to continue during 2004.

Challenges in the Printing Industry

According to Davis (2004), the demand for printed products and services are primarily driven by economic growth, the Internet, and customer behavior.

Technology has continuously influenced the print industry. However, business conditions and the economy continue to have a nearly equal impact (Naselli, 2004, p.18). For several years, economic conditions have been the top challenge for printers, followed by competition and pricing (Naselli, 2004, p.18). Quick and small commercial printers are also challenged by the economy, but are maintaining their competitive edge in the short-run, fast turnaround market.

A common assumption is that businesses will improve their profitability with the recovery of the economy (Naselli, 2004, p.18). However, the problem is no longer just the economy but the changing nature of graphic communications, which is no longer simply about putting ink on paper. It's also about non-print media that replaces ink with pixels Printers can no longer blame volume declines on a poor economy.Those printers that have survived the economic slump are now faced with surviving the economic recovery. According to Naselli (2004, p.19):

> One of the major forces that buoyed the print industry in the boom years was the advertising and marketing of ways of avoiding having to print things – namely the Internet and the Web. This is why we stress that a focus on "value-added services" can help ensure printers do not suffer unduly when print work ebbs.

This is reinforced by customers becoming increasingly demanding and knowledgeable. Due to globalization, companies are no longer competing locally but also internationally. Consequently, competition has become fierce. As such, print companies' need to constantly find ways to distinguish themselves from their competition and ensure customers are being satisfied. According to Hamm (2002):

> People are changing how they want to communicate. Printers have to find ways to add value for their customers. The printing industry for the future will be small but more relevant.

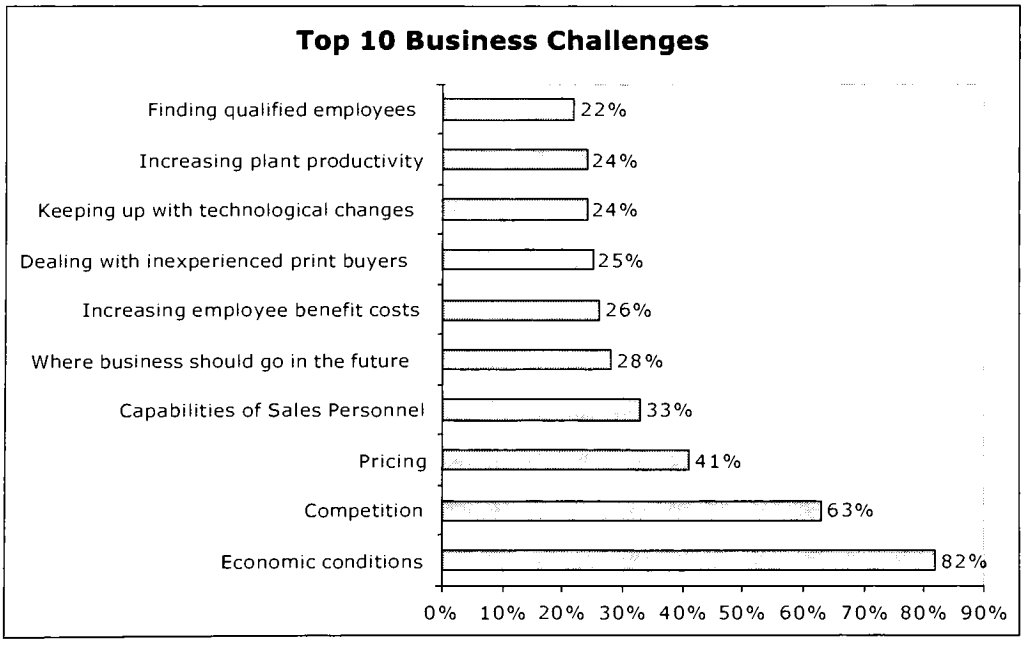

Figure 2. Top 10 Business Challenges – All Print and Prepress Businesses, Fall 2003 (Naselli, 2004, p.19).

Figure 2 illustrates the top business challenges the industry says that it faces (Naselli, 2004, p.19). Throughout the duration of the economic downturn, issues related to the economy, competition, and cutting costs have been the top

challenges. As the economy improved so did business conditions. The logical conclusion was that the economy was the source of the problem. However, this is yet to be seen, since all of these challenges keep increasing for printers (Naselli, 2004, p.20).

Two new sales opportunities for printers have been identified: 'broadening digital printing services' and 'making the company's Web site more interactive', indicating that printers are beginning to acknowledge the role that digital printing, cross media and the Internet will play in their future businesses (Evans, 2003, p.23). It is evident that printers are looking away from traditional businesses practices.

Trends in the Printing Industry

Evans (2003, p.23) states that less than 2,000 companies claim to be searching for a press. This is historically the lowest result in the history of the NAPL State of the Industry survey (Evans, 2003, p.23).

NAPL states that the printing industry is finally showing signs of what may be a sustainable upturn, following more than two years of steep and broad sales declines. NAPL forecasts that print sales will grow as much as 4.1% in 2004, compared to 2.6% in 2003 (NAPL, 2004b). Despite the gross domestic product (GDP) growing at 7.2%, printing companies can no longer rely on an economic rebound to grow their businesses. The economy is rising rapidly especially with

the elections and Olympic games occurring this year. Not long ago, all of this would have meant good times across our industry (NAPL, 2004b). Currently, however, printers are being forced to prepare for growth in markets that are increasingly competitive in numerous ways. Although state-of-the art technology is desirable, it is not necessarily the main ingredient for success in today's soft environment (Heckelman, 1996).

Across the board, printing markets are being redefined by shorter runs, increasing use of color, personalization and growing demand for value-added services such as database management, fulfillment and mailing (Smith, 2003).

Smith (2003, p 32) suggests that the top critical trends identified in 2002 were:

- Digital links to customers
- Wider-format digital imaging
- Waterless printing
- Practical e-commerce
- Computer-to-plate adoption, on and off-press.

Printing Companies

The printing industry is still dominated by small- to medium-sized companies that employ one to twenty-five people (Wilson, Gentile and GATF Staff, 2002). There are the very large companies that employ many hundreds or thousands of workers, but they account for a small portion of all the companies involved with

the print trade. Regardless of size, these companies employ hundreds of thousands of people in a variety of challenging occupations, which demand expertise or understanding of art/design, color, computers, engineering, management/business, manufacturing, people/personnel, photography, sales/marketing, or science (Wilson, Gentile and GATF Staff, 2002). As a result of these processes, printing companies are able to create and produce a broad spectrum of products used in daily life.

Markets and Applications

The printing industry caters to an array of niche markets. While some printing companies specialize in offering a specific product, others offer a diversified range of products and services. Various pundits and associations have attempted to classify the products manufactured by this industry. The NAICS (North American Industry Classification System) has been working for years to upgrade its classification system to incorporate the vast spectrum of products produced by this industry. According to Wilson, Gentile and the staff of GATF (2002), some of the key print markets are:

- General Commercial Printing
- Book Printing
- Direct Mail Printing
- Packaging
- Magazine and Periodicals

- Newspapers
- Prepress Service Binderies
- Trade Binderies

Value-Added Services

Graphic communication is no longer print-centric (Naselli, 2004). Companies are confronted with ever-increasing competitive pressures and "print apathy," threatening to increasingly commoditize the industry (Sherburne, 2004).

According to TrendWatch (2004a), value-added services are becoming the lifeblood of the commercial printing business, both in terms of profitability and customer relationships. NAPL (2004a) states that:

> Companies must understand their customers like never before. The more printers can understand why their customers choose print to communicate a message and why they should spend a greater percentage of their communications dollars in print, the more financial success they will enjoy.

Carson (1998, p.26) states that value-added services are something that printers must offer in order to retain and gain customers in a market where all the major players are seeking something special to enable them to produce the sleekest product in the most efficient manner. NAPL (2004a) suggests that the only way printers can combat current challenges and remain competitive is by offering diversified services. This trend has been evident for years, following unfavorable economic conditions that have been hovering over the industry for quite some

time now (Bauer, 2004). All ancillary additions to a basic printing project can represent a positive profit center for commercial printers.

Defining Value-Added Services

No matter what business or occupation you are in, service is an integral part of what you do. Organizations that understand service means focusing on the customer, not only at the front line but also throughout the entire work force, have a significant strategic advantage (Butterfield, 1991).

Selling value has become a key message among industry leaders throughout the graphic communications industry (Teng, 1998, p.30). However, selling value can be challenging, especially since people define value-added services differently. Value has to be added by understanding the customer's business and ultimately helping him or her improve the bottom-line.

Most print companies have always thought of service as producing a job quickly and on-time (Birkenshaw, 2002, p.32). Butterfield (1991) defines service as a planned, systematic means of providing for the wants, needs, and desires of your customers. A recent RIT Printing Industry Center pilot survey (Cummings and Chhita, 2004) defined value-added services as those services that offer customers one-stop shopping solutions, that increase value by promoting efficiency and reducing customer costs. On the other hand, Dodd and Lavelle

(2004, p.12) define value-added services as any non-print, graphic communications-related service.

According to Alexander (2003), service diversification can occur before the print run (such as design and photography), after the print run (such as fulfillment, mailing services, document management, and CD services) or as overall enhancements (such as variable data, web services, and facilities management). Dodd and Lavelle (2004, p.12) elaborate further, suggesting that these services would include art, design and creative services, fulfillment services, mailing services, client training and consulting, database management services, Internet/web services (such as page design and hosting), CD services, and facilities management services. In addition, value-added services could include communications-related services, such as marketing campaign design and implementation services, or document management services (Dodd, Lavelle, 2004, p.12). For example, the Jarrold Printing company thinks that offering CTP is still a major way to add value (Carson, 1998, p.31).

According to the 2003 NAPL *Future of Print Survey*, respondents predicted an increase in value-added services such as fulfillment, mailing, creative services, digital asset/database management, and web services (NAPL, 2004b).

Importance of Diversification

Since the late 1990s, combined prevailing economic and technological forces have restrained revenue growth and depressed the earnings of most U.S. commercial printing companies (Dodd and Lavelle, 2004, p.5). For several years, a growing chorus of graphics arts industry economists, analysts, authors, and consultants have been admonishing printers to "reinvent " their businesses to meet the competitive challenges of a rapidly evolving graphic communication marketplace. Consequently, an increasing number of companies have remodeled their strategies, adopting value-added services in order to address the growth and profitability crisis that is plaguing the industry (Dodd and Lavelle, 2004, p.5).

Concentration on value-added services increased as the U.S. endured its worst recession in over two decades (Naselli, 2004). While the industry consolidates further and continues to shrink, only those companies that are able to distinguish themselves and satisfy unique customer needs will be able to succeed (Naselli, 2004). The key feature of the relationship between a successful printer and customer, where the printer adds value, will be pro-activity (Carson, 1998, p.31). Printers will have to sell themselves by stating exactly what they are able to offer. For example, Polestar's Chantry plant offer two standard color covers instead of one, inkjet numbering, UV varnish, and project management for outsourced finishing, claiming that they 'take all the headaches away' (Carson, 1998, p.32).

The company further suggests that adding value ultimately boils down to "seeing yourself as one with clients."

Types of Value-Added Services

According to Cummings (2003a), it is imperative for printers to integrate value-added services into their business mix if growth and recovery is to be sustained. Fitzsimmons and Fitzsimmons (2000, p.11) suggest that service innovation can be classified as incremental (referring to the tweaking of some aspect of a current service), radical (introducing a service that is new to the market), or technology-driven (a service that is influenced by technology). Customers expect total solutions providers and are requesting services beyond printing including but not limited to the following:

Consulting

Companies such as Profetus,Inc. offer services rather than print products pertinent to the graphic communications industry. A typical consultancy firm aims at improving efficiency, productivity, cost effectiveness, customer relationships, and the bottom-line of printing companies (Profectus, 2004). Examples of services offered by consultancy firms include sales training, cost accounting consulting, estimating consulting, strategic consulting, print management consulting, and Internet consulting.

Data Asset Management

According to Huff (2004), digital assets are electronic files in a multitude of formats including graphics, photographic images, audio files, and video files. With the explosion of such electronic media, tools such as digital asset management are vital in order to communicate to customers in an effective and efficient manner. Similar to document management, digital asset management offers special features used for managing and accessing digital assets (Huff, 2004).

Distribution

Offering mailing, warehousing and distribution have become distinctively advantageous for printers. Cagle (2004) states that presently, mailing capabilities may seem like a value-added bonus service, but two years from now, those companies that have not committed to this discipline will find themselves in an unenviable minority. According to the Arandell Corporation located in Wisconsin, adding mailing services increased incoming work in their company, and customers have taken to the one-stop-shopping mentality (Cagle, 2004). Heller, *et al* (2003, p.7) suggest that mailing has never been more important than it is today. Due to considerable advances in technology such as digital printing and variable data printing, it has become much easier to get a printed piece to a customer (Heller *et al*, 2003, p.7).

E-commerce

According to Core (2004), the integration of web-enabled print is part of a decade-long evolution of our industry. People either acknowledge it or they don't. Adopting e-commerce encompasses and improves communication between print buyers and sellers as well as the workflow (Core, 2004).

Finishing

Finishing refers to all activities performed on a printed product. These activities include UV and press coatings, die-cutting, embossing and debossing, foil stamping, laminating, tabs and indexing. Larkin (2003) states that the finest printing and prepress in the world can be ruined by the lack of attention in the finishing area. According to the dotprint.com website, for years the finishing sector has been dubbed as the Cinderella of the industry, since it has been dormant while the prepress and printing areas have increasingly automated and improved their capabilities. However, due to pressure for faster turnarounds, shorter production runs, and a growing realization that finishing can become a profit center in its own right, finishing is being automated significantly (Dotprint, 2004). Advances such as CIP4 technology are encouraging printers to add their own finishing in-house (Larkin, 2004), which Meade (2003) suggests adds value to a job.

Fulfillment

Of all the services that printers offer their customers today, either as generators of increased presswork or as cogs in one-stop shopping service machines, fulfillment is one of the most economical and popular options (Cagle 2003a, p.28). Based on the NAPL *2003-2004 State of the Industry Survey*, 59.6% of respondents felt that fulfillment would be the fastest growing service in 2004. Sherburne (2004) suggests that fulfillment services are the icing on the value-added cake. Sherburne states:

> As customers increasingly seek end-to-end solution providers who can address specific business processes in a turnkey fashion, leading print service providers are jumping into the fray, offering their customers integrated business solutions in which fulfillment and distribution play a key role.

Fulfillment includes the storing and distribution of productions directly to end-users, after the initial job has been printed and mailed (Cummings and Gallager, 2003, p.29). Cummings and Gallager (2003, p.29) suggest that there are three basic types of fulfillment:

- *Literature* – relates to the physical distribution of company information such as brochures and catalogs.
- *Product* – includes the distribution of goods such as magazines, CDs and audio-tapes.
- *E-commerce (Internet)* – involves the electronic distribution of a requested product such as coupons and certificates.

Mailing

Addressing and mailing have never been as important as they are today (Heller, et al, 2003, p.6). Cagle (2004) states that presently, mailing services might seem like a value-added service but two years from now, those companies that have not committed to this discipline will find themselves in an unenviable minority.

Print on Demand

Print on demand (POD) technology allows a complete book to be printed and bound in a matter of minutes. This makes it easy and cost-effective to produce books in the required quantities, rather than in large print runs of a thousand or more. A downfall of POD is that the books produced have a higher unit production cost compared to books produced using traditional technologies. Commercial publishers typically use POD to provide customers with value when they can't justify the expense of producing and warehousing a large print run (Romano, 2004).

Variable Data Printing

Variable data printing (VDP) has become an effective tool for reaching existing and prospective customers (Whalen, 2004). It is mostly being offered in the commercial print market. It is not commonly used in the publishing market. However, its use in advertising through personalized brochures and mail has increased tremendously over the years (Whalen, 2004).

Web to Print

Early adopters of Internet technologies are now providing real functionality to their customers (not just "brochure-ware"), such as job submission, simple specifications, online catalogs, and job status information, and they need to increase their traction and business with customers via the web (Gehman, 2004). Gehman (2004) states that there is a strong demand from customers for Internet applications, from job submission to fulfillment services in the industry. Gehman further suggests that we are beginning to see systems that link customers on the Internet to production and business systems at the printing company.

Reasons for Diversifying Services

Competition is healthy for an organization, ensuring that companies continuously find new and innovative ways to differentiate themselves (Butterfield, 1991, p.15). Service is an excellent way to distinguish a company from its competitors, and the number of possible ways to enhance what the company does is limited only by the company's imagination. This idea is increasingly being acknowledged throughout various industries. As product offerings become standardized and commoditized, companies are searching for new ways in order to survive and remain competitive.

Riell (2004, p.24) suggests that companies who do not offer ancillary services such as digital asset management and data mining capabilities compel their core business on a continual track of price pressure, competition and

commoditization. According to Mahler (1992, p.6), a diversification move must truly add value to the business unit level if it is to be considered successful. Porter (1985) suggests that there are three essential tests for when diversification will create shareholder value:

- the Attraction Test—industries chosen must either be or become structurally successful,
- the Cost-of-Entry Test—the cost of entry should not consume subsequent returns, and
- the Better-Off Test—the new business unit must gain competitive advantage from its link with the corporation or vice versa

NAPL (2004b) states that technology is eating into the core applications of printing companies, forcing them to change their customer models. According to the NAPL *2003-2004 State of the Industry Survey*:

> Printers in virtually every market listed competition from the Internet or other print alternatives as a critical issue – ranging from a relatively small percentage of those producing magazines (11.8%) to substantial majorities among those producing directories and manuals (65.7%), annual reports (61.5%), and newsletters (60.5%).

Many of the shops are bringing more services such as finishing in-house. This trend is driven by shorter runs coupled with the need for faster turnarounds, as well as a plethora of used and lower-priced, compact equipment (O'Brien, 1998). Walker (1999), on the other hand, suggests that companies are incorporating services in-house primarily to control quality, reduce costs and lead times.

However, this growth is restricted due to investment costs in combination with the required amount of work to keep busy (Walker, 1999). In addition, Walker states that bringing services such as finishing in-house further promotes automation resulting in shorter set-up times and improved productivity.

Challenges to a Profitable Diversification

NAPL (2004a, p.7) state that diversification is being seen as a ticket to growth, profits, pricing, power and customer loyalty. However there is a difference between diversifying and diversifying profitability. NAPL (2004b, p.7) suggest that challenges to profitable diversification include:

- *The cost of diversification* – includes hardware, software, additional space, marketing and managing the new services, training, and productivity lost to integrating new activities into the current workflow.
- *Changing client perspectives* – convincing customers that printers do more than put ink on paper, offering valuable services that customers will be willing to pay for.
- *Changing internal perspectives* – convincing employees and other stakeholders that diversification is a viable strategy for the organization.
- *Expanding potential liability* – by offering customers services, printers are susceptible to losing not just one job but two: the print job as well as the service they are currently offering.

Dodd and Lavelle (2004) suggest that the motivation behind all diversification is increased revenue growth and improved profitability. However, offering new services and actually earning a substantial profit from those services are two very different things (Dodd and Lavelle, 2004). Dodd and Lavelle further state that 75% of all recent business diversification efforts have failed to produce the expected financial benefits. Consequently, diversification is no guarantee of improved financial performance (Dodd and Lavelle, 2004).

Value-Added Business Model

According to Birkenshaw (2002, p.31), print companies have always considered themselves as supplying a service, but an increase in the importance of service over price will emerge. Companies will remodel their business strategies from cost plus to service value, i.e., "What is it worth?" not "What did it cost?" (Birkenshaw, 2002, p.31). Although services are difficult to evaluate, they unquestionably still have value (Birkenshaw, 2002, p.31). Adapting this new business model poses numerous structural changes. According to Birkenshaw (2002, p.31), these changes include:

- There will have to be a clear two-way communication channel between the customer and the print company, such as providing more information, more openness or transparency, more partnership-type arrangements (e.g. facility management), and e-commerce. In essence, this means that companies will digitally transfer copy, metadata and administrative data

(i.e. the use of JDF), interchange data with customers, manage print production in customer premises, and proof remotely.

- The selling approach will change. As timescales contract, offering a rapid and reliable service will be paramount. In addition, as run lengths shrink, the timescales and costs involved in a job will be determined much more by the time spent in design, prepress, and delivery and fulfillment, rather than in actual production. Consequently, the process has to emphasize service rather than the end product. In addition, print companies will avoid negotiating with a print buyer (who focuses on unit cost), and instead concentrate on the individual to whom the service matters.
- A change in emphasis in the product and service offering to the customer will occur. More services will be offered, some of which will be outsourced. Companies will change their focus from being a printing business to being a supplier of promotional services such as project design and project management.
- Printing companies' unique selling propositions (USPs) will change, emphasizing flexibility, creativity, reliability and technical superiority.

Implementing Value-Added Strategy

TrendWatch (2004b) suggests that the industry is not investing in the products and services required for a profitable value-added model. Furthermore, the true concept of customer-centric value-added services is still overseen by the industry

as a whole (TrendWatch, 2004b). Print companies are hoping that by offering these new services, they will be able to rejuvenate revenue growth and improve profit margins (Dodd and Lavelle, 2004). Unfortunately, diversification does not guarantee improved financial performance (Dodd and Lavelle, 2004).

TrendWatch (2004a) states that firms may adopt value-added services, but the true differentiator isn't the services themselves but the business philosophy that drives them. Successful diversification is hard to achieve (Dodd and Lavelle, 2004). According to Dodd and Lavelle (2004), 75% of all recent business diversification programs have failed to produce expected financial gains. The primary reason for this high percentage is that companies fail to integrate the service being offered into a total business philosophy (TrendWatch, 2004).

Dodd and Lavelle (2004) suggest that there are six steps to implementing a successful value-added strategy. The first three steps involve company-wide decisions and actions (Dodd and Lavelle, 2004, p.51). The final three steps involve specific processes (Dodd and Lavelle, 2004, p.51).

Step 1: Create a winning strategy

Creating a sound diversification strategy involves determining what new services a company will offer, and then crafting a distinct business strategy for each new service (Dodd and Lavelle, 2004).

Step 2: Think solutions, not services

The second step requires managers to make the fundamental decision to become value-added solutions providers (Dodd and Lavelle, 2004, p. 51). Many companies are viewing value-added services as an antidote for the "commoditization" of print. These companies anticipate improvements in profits by providing a means of distinguishing their own companies from their competitors, thereby avoiding the stiff competition that dominates the market for traditional printing services (Dodd and Lavelle, 2004).

Step 3: Tune the orchestra

The third step is to design and implement an operating model (the manner in which a company configures its business operations) that embodies and supports the value-added strategy developed (Dodd and Lavelle, 2004).

Step 4: Master solution selling

Dodd and Lavelle (2004, p.52) claim that "solutions sales" differ in fundamental ways from the sale of traditional printing services. A sound value-added solution sales strategy encapsulates five key elements: buyer identification, seller strengths and weaknesses, business results and personal victories, need analysis, and value justification.

Step 5: Create plans and specifications

Plans and specifications need to be developed for each value-added service being offered. Various tools can be used for planning, including cause-and-effect diagrams and process maps such as flowcharts, relationship maps, and cross-functional process maps (Dodd and Lavelle, 2004).

Step 6: Select the right technology

Print providers can use tools such as a Technical Specification Sheet to determine the right technology required for the value-added solution to be offered (Dodd and Lavelle, 2004). Technology should be selected based on its capacity, capability and cost evaluation (Dodd and Lavelle, 2004).

Although implementing an effective service strategy is not painless and cannot be done overnight, following a step-by-step process eases the change process. The underlying message is ultimately to integrate the company's improvement efforts into a meaningful, planned approach, targeting them carefully (Seth and Sisodia, 2002).

Conclusion

Vincenzino (2004, p.16) states that diversification continues to represent a major response in the graphic communications industry to the changing nature of print and the broadening scope of competition. Vincenzino (2004, p.16) further suggests that:

> Because of inroads from electronic alternatives and digitization, the size of the print market will not grow as rapidly as the ensuing economic recovery might suggest.

Consequently, printers can no longer rely on economic growth to boost sales and must be geared more towards offering value-added service in order to distinguish themselves from their competitors (Vincenzino, 2004). According to TrendWatch (2004a), value-added services are becoming the lifeblood of the commercial printing business, both in terms of profitability and customer relationships.

Service diversification can occur before the print run (such as design and photography), after the print run (such as fulfillment, mailing services, document management and CD services), or as overall enhancements (such as variable data, web services and facilities management) (Alexander, 2003). According to the *2003 NAPL Future of Print Survey* respondents predicted an increase in value-added services such as fulfillment, mailing, creative services, digital asset/database management, and web services (NAPL, 2004b).

TrendWatch (2004a) suggests that the industry is not investing in the products and services required for a profitable value-added model. Print companies are hoping that by offering these new services, they will be able to rejuvenate revenue growth and improve profit margins (Dodd and Lavelle, 2004). Consequently this research will focus on the commercial print industry, specifically identifying the types of services that are being offered and the

benefits of diversifying these services. Some questions that will be explored include:

- Why are companies offering them?
- How are these services being incorporated into their current workflow?
- How are they benefiting from offering these services?
- How are customers benefiting from being offered these services?

Chapter 3

The Hypotheses

The research area explored in this thesis is value-added services. Although the research is exploratory in nature, it is hypothesis-based. The focus was narrowed into a comparative analysis. The initial research idea explored value-added services in the commercial printing industry. To focus on the purpose of this research, commercial printers were classified into two specific categories:

- *Conventional commercial printers* refer to those commercial printers that use traditional methods of producing print, including letterpress, lithography, flexography and gravure printing.
- *Digital commercial printers* refer to those commercial printers that make use of digital printing equipment to produce print.

Various research questions were developed focusing on value-added services offered in the commercial print industry. Research questions include:

1. Do large conventional commercial printers offer a broader spectrum of value-added services than small conventional commercial printers?
2. Do large digital commercial printers offer a broader spectrum of value-added services than small digital commercial printers?
3. Is fulfillment the most frequently offered in-house value-added service of conventional commercial printers?

4. Is fulfillment the most frequently offered in-house value-added service of digital commercial printers?

Hypotheses were developed in order to explore the above mentioned research questions as follows:

The first two hypotheses focus on quantifying and determining whether there is a relationship between the number of services offered in-house and the company size as defined by the number of employees. It is believed that the larger the company, the more in-house value-added services they will offer. This is explored in both categories, conventional commercial printers and digital commercial printers.

H_1: The number of value-added services offered in-house by digital commercial print companies will positively correlate with the size of the company.
H_{01}: The number of value-added services offered by digital commercial print companies will not positively correlate with the size of the company.

H_2: The number of value-added services offered in-house by conventional commercial print companies will positively correlate with the size of the company.
H_{02}: The number of value-added services offered by conventional commercial print companies will not positively correlate with the size of the company.

According to a survey conducted by TrendWatch (2004b), 22% of respondents cited broadening fulfillment, shipping, and mailing capabilities as top sales

opportunities. The NAPL *2002-2003 State of the Industry Report* suggests that nearly 70% of respondents plan to offer fulfillment and/or mailing services in the coming 12 to18 months. As such, fulfillment offered as a value-added service is further explored in the next two hypotheses, in an attempt to validate secondary research gathered. It is being assumed, in both instances, that fulfillment is the most popular offered value-added service.

H_3: The most frequent value-added service offered by digital commercial printers is fulfillment.

H_{03}: Fulfillment is not the most frequent value-added service offered by digital commercial printers.

H_4: The most frequent value-added service offered by conventional commercial printers is fulfillment.

H_{04}: Fulfillment is not the most frequent value-added service offered by conventional commercial printers.

Chapter 4

Methodology

This thesis is based on the data gathered through an exploratory research project (Cummings and Chhita, 2004) conducted via the RIT Print Industry Center (PIC). Exploratory research is low constraint research that is conducted early in the study of the research area, and is designed to investigate feasibility and to generate rather than test hypotheses (Graziano and Raulin, 2004, p.416). This project explores industry trends in fulfillment, finishing and distribution.

The thesis explores a subset of the data gathered through the survey instrument used in the PIC research project. The objectives of the thesis were:

1. To clearly understand the changing business dynamics in the printing industry.
2. To determine whether there is a positive correlation between the number of value-added services being offered and company size.
3. To determine the degree to which fulfillment is being offered as a value-added service.
4. To add to the current base of research on this very important topic.

Consequently, this thesis will be hypotheses-based and statistically validated.

Research Methodology

Since this thesis was done in combination with a Print Industry Center research project, in both instances the same methodology was used to gather data. The methodology is as follows:

1. An in-depth secondary research study was conducted in order to provide a foundation for the composite research study.
2. Several meetings (via conference call) were held during February and March 2004 with an established focus group, comprised of printers and print services providers. The members of the focus group represent companies that offer fulfillment and other finishing and distribution services. The data and insight gathered from the focus group were used to develop the pilot survey instrument.
3. The survey, after being approved by various RIT faculty members and the focus group participants, was pilot tested at the Research and Engineering Council of NAPL's 46th Annual Binding, Finishing and Distribution Seminar, held in April 2004 in Chicago, IL. The survey was administered to 150 attendees at the seminar composed primarily of printers, print service providers and print suppliers. A 41% response rate was achieved *(refer to Appendix B: Summary of Pilot Survey Results)*.

After reviewing the data responses and response rates from the pilot survey, the appropriate modifications were made to ensure more meaningful results from the final survey.

4. The final survey was administered via the Internet to Finishing Resources Inc. and the Binding Industries of America (BIA) databases.

Sample Definition

Since this research is primarily focused on finishing, fulfillment and distribution, the sample population was carefully selected to target those companies that offered finishing, fulfillment and other value-added services. Finishing Resources Inc. was selected as the primary population. Finishing Resources Inc. has 980 members, which are comprised of commercial printers (74.5%) and trade finishers (25.5%).

A lower than anticipated response rate was received from Finishing Resources Inc. Consequently, a second population, Binding Industries of America (BIA) was used. BIA has 115 members, of which 50% are trade finishers and 50 % are equipment suppliers. The response rate from Finishing Resources Inc was 3% and the response rate from BIA was 11%. As an incentive to complete the survey, the respondents were offered the *RIT Test Targets 3.0* publication or a book entitled *Hand of the Master*, by Professor Frank Romano and RIT students.

Survey Instrument

The survey was made up of five sections. These sections included:

A. Demographic Profile

Five questions were asked to reflect some information about the respondent. Data gathered included the type of business, markets being served by the business, size of the company in terms of the number of employees, the respondent's position, and the number of years he or she has been employed in the printing industry.

B. Industry Business Trends in Finishing and Distribution

This section focused primarily on finishing. It encompassed four questions exploring the type of services being offered, improvements in finishing processes, finishing management, and distribution processes.

C. Value-added Services

Extensive data was gathered in this section of eight questions. Since different people define value-added services differently, a definition was given, based on the pilot survey responses, at the beginning of this section. Data gathered included services being offered, duration of services, reasons for offering those services, implementation strategy used, revenue expectations, and customer and company benefits resulting from offering these services.

D. Fulfillment

The fulfillment section had three questions. A definition of fulfillment was provided at the beginning of the section. Data gathered from this section primarily focused on whether or not fulfillment was being offered, the types of fulfillment services offered, and whether or not offering these services has met revenue expectations.

E. Comments

This section gave respondents the opportunity to express their opinions regarding the future of finishing and distribution as well as value-added services in general. Three open-ended questions were employed, with two yes or no questions as sub-questions. Questions asked allowed respondents to reflect on whether and how they foresee finishing and distribution as growth opportunities, what value-added services they might offer in the future, and whether or not they think companies need to diversify in order to remain competitive.

Nominal, numerical and ordinal scales were used for the majority of the questions, represented by check boxes. Respondents were given the option to select more than one answer for some questions. A "check all that apply" instruction was given for those questions (refer to *Appendix C: The Finishing and Distribution Industry Status Report).* Examples were provided where clarification might have been needed. In addition, a brief

description of the survey and its purpose was introduced at the beginning of the survey.

For the purpose of this research, and in order to prove the hypotheses, this thesis paper is focused on the questions in sections A, C, D and E.

Limitations

There were various limitations in conducting this survey and in the data gathered.

- The survey was administered through third parties. As such, communication barriers forced the researchers to extend the deadline.
- The targeted population might have viewed the survey as too lengthy. Consequently, this might have discouraged respondents from answering all the questions to their full potential. As a result, a few incomplete surveys were received and most respondents did not elaborate in section E.
- Respondents were given the option to "check all that apply" in some instances. This caused data to overlap and thus clear distinctions were limited in some instances.
- The survey was administered over a short duration (July through September 2004). This may have adversely affected the response rates.

Analysis of the Data

For the purpose of this thesis, both sample groups were combined to analyze the results. This was primarily done due to the sample size of both populations being small. Since the respondents completed the survey online, the data was automatically coded according the data dictionary designed and placed into separate Microsoft Excel spreadsheets *(*refer to *Appendix D: The Finishing and Distribution Industry Status Survey Coding Key).* Both spreadsheets were compiled together. Basic calculations were executed to determine the percentage response rates to each question.

Further analysis was conducted using Statistical Package for Social Science (SPSS) and Mini Tab, where the data was re-entered into the program and descriptive statistics were generated.

Due to the nature of the first two hypotheses, categorical tables were used to analyze the data generated using the Fisher Exact Test. This test was primarily used due to the non-parametric nature (sample size < 30) of the sample. Although the Fisher Exact test is similar to the Chi Square test, it was the preferred choice since it accommodates expected values that are less than 5. A regression analysis would not provide any valuable results, since the scale used is widely spread on the axis from less than 20 to 201 and onwards. For a clearer result, exact values would have been a better option.

The last two hypotheses were designed to determine whether or not fulfillment was the most frequently offered service. The simplicity of these hypotheses requires a simple count of the number of services offered by each type of printer.

Chapter 5

The Results

The instrument used for this research was an extensive six-page survey focusing on industry trends in fulfillment, finishing and distribution. The researchers selected the populations of Finishing Resources Inc. and the Binding Industries of America to survey because they are representative of those businesses that would most likely offer finishing, distribution and other value-added services. It was also assumed that this population is an adequate U.S. demographic and geographic representation of commercial printing and finishing companies. The following section details the combined descriptive results of the survey *(*refer to *Appendix G: A Summary of the Data Gathered)*.

Final Survey

Demographic Profile

Respondents were allowed to select multiple choices to describe their business type (Figure 3). The majority (64.6%) indicated finishing as their business type. The next largest choice was full service provider (41.7%). For the purpose of this research, a full service provider is defined as a company that provides a full range of production services that begins with prepress and continues through to distribution. Conventional printers (37.5%) and fulfillment (31.3%) are reported as

the next primary business types. The respondents selecting the "other" category were representative of a variety of equipment manufacturers and suppliers.

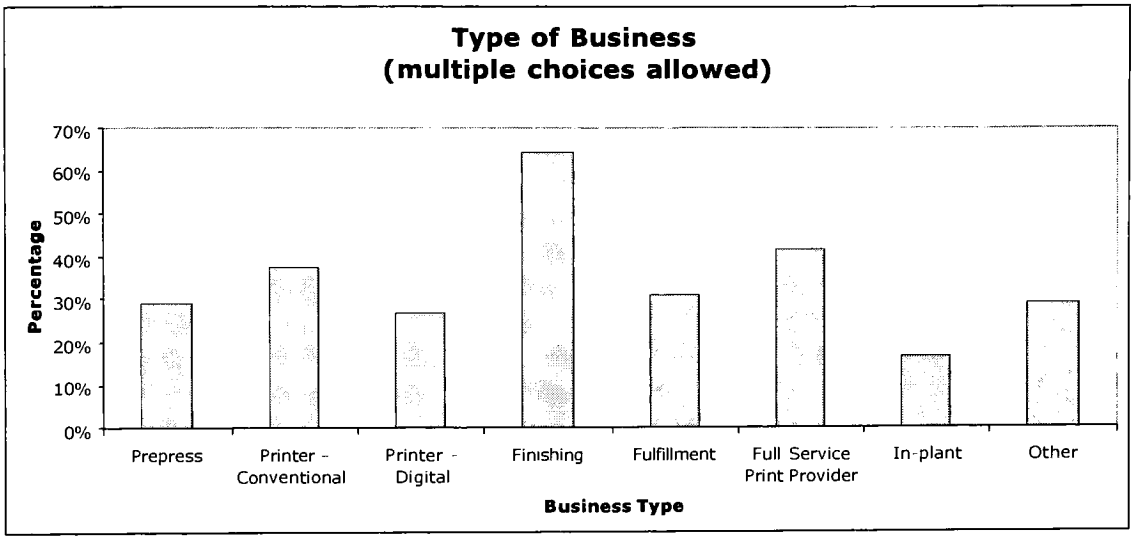

Figure 3. Type of business.

Figure 4 shows the markets served. Approximately 65% of the respondents provide services to the commercial printing market. This is followed by trade services (52.1%) and mailing services (47.9%). Commercial printing is defined as encompassing markets such as catalogs, newspapers and magazines. Trade services include binding, finishing and distribution. The category "trade services" was incorporated based on inputs from the respondents in the pilot survey, where it was listed multiple times under "other." Thus it was evident that this area is recognized as a market sector for printing and finishing providers.

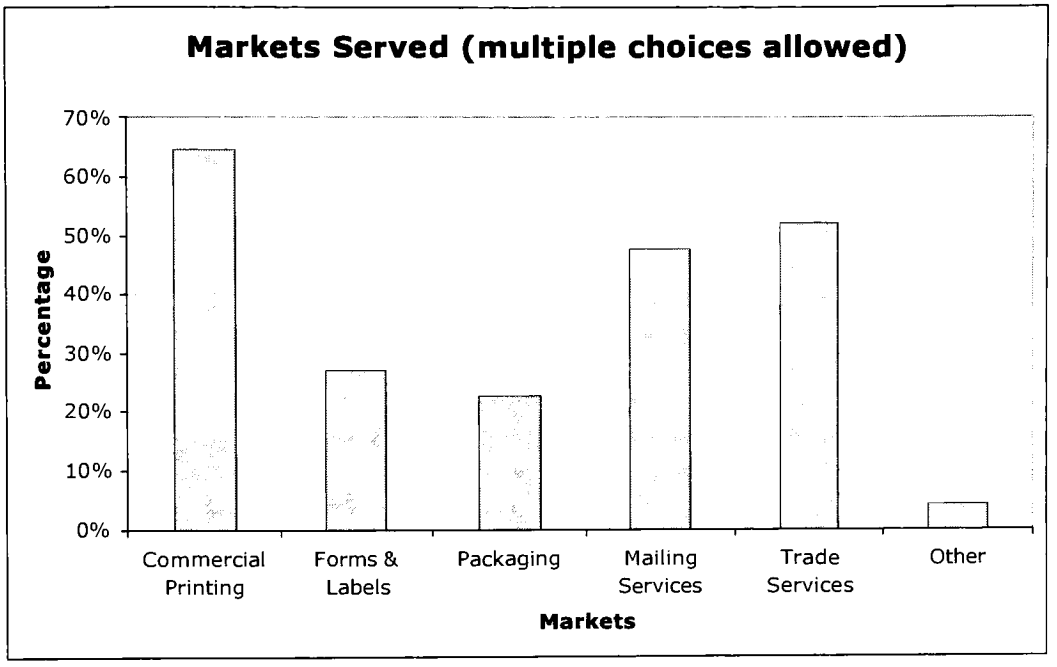

Figure 4. Markets served.

The majority of respondents were employed by companies with more than 201 employees (Figure 5). Full service providers were the most dominant in this area. Fourteen of the 21 respondents who consider themselves full service providers work in companies with over 201 employees. Additionally, 11 of the 18 conventional printers and 9 of the 14 prepress firms employ over 201 people.

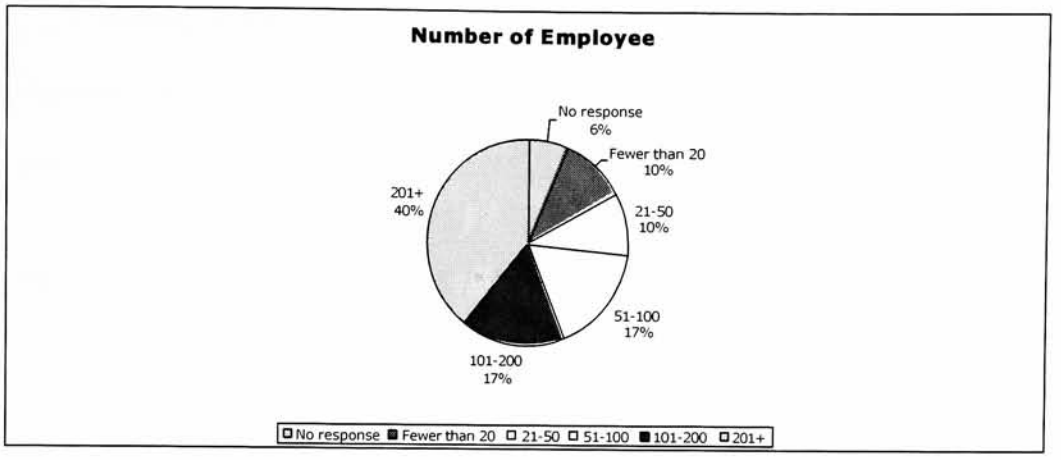

Figure 5. Number of employees.

The cross tabulation represented in Table 2 shows that more than 50% (22) of the 43 respondents were in senior (president, vice president, director) management positions. All of the senior managers have been employed in the printing industry for over 11 years. Over 90% of this group has been employed in printing for more than 16 years. Forty-three of the total respondents have 11+ years experience and 27 of 43 have 16+ years and are involved in the finishing business.

	No Response	Less than 2 years	6-10 years	11-16 years	Over 16 years	**Total**
No Response	3					**3**
President				1	12	**13**
Vice President					9	**9**
Director		1			2	**3**
Production Manager					2	**2**
Finishing Supervisor				2	2	**4**
Other			1	3	10	**14**
Total	**3**	**1**	**1**	**6**	**37**	**48**

Table 2. Job title versus position.

When looking at the general relationship between business type and years employed, finishing has a significant relationship (p=0.049), with 27 of 31 having over 16 years of experience.

Value-Added Services

Different people interpret value-added services differently. Consequently, a definition of value-added services based on the responses received from the pilot survey was given at the beginning of this section. Table 3 represents the value-added services offered in-house versus outsourced. Based on popular value-added services currently being offered, e-commerce (71%) is the most popular in-house service being offered, followed by fulfillment (54%), digital asset management (54%) and finishing (52%). Web-to-print was the least offered in-house service (4%). All services were mostly offered in-house rather than outsourced. Fulfillment (6%), followed by mailing (4%), and consulting (4%), were the top outsourced services. Those respondents that selected "other" as an option offered warehousing and press art capabilities as in-house value-added services.

	In-house	Outsource
Consulting	31%	4%
Data asset management	54%	2%
Distribution	21%	0%
E-commerce	71%	0%
Finishing	52%	4%
Fulfillment	54%	6%
Mailing	25%	4%
Print on Demand	29%	2%
Variable data printing	23%	2%
Web to Print	4%	0%
Other	6%	0%

Table 3. Value-added services offered in-house versus outsourced.

The primary reason given for offering value-added services was competitive advantage (64.6%), followed by strategic decision (62.5%) and the service being requested by the customer (54.2%). Some respondents elaborated their decision by selecting the "other" option, stating that they wanted to be able to differentiate themselves from their competition, better understand the needs and demands of their customers, or ultimately identify an additional profit opportunity.

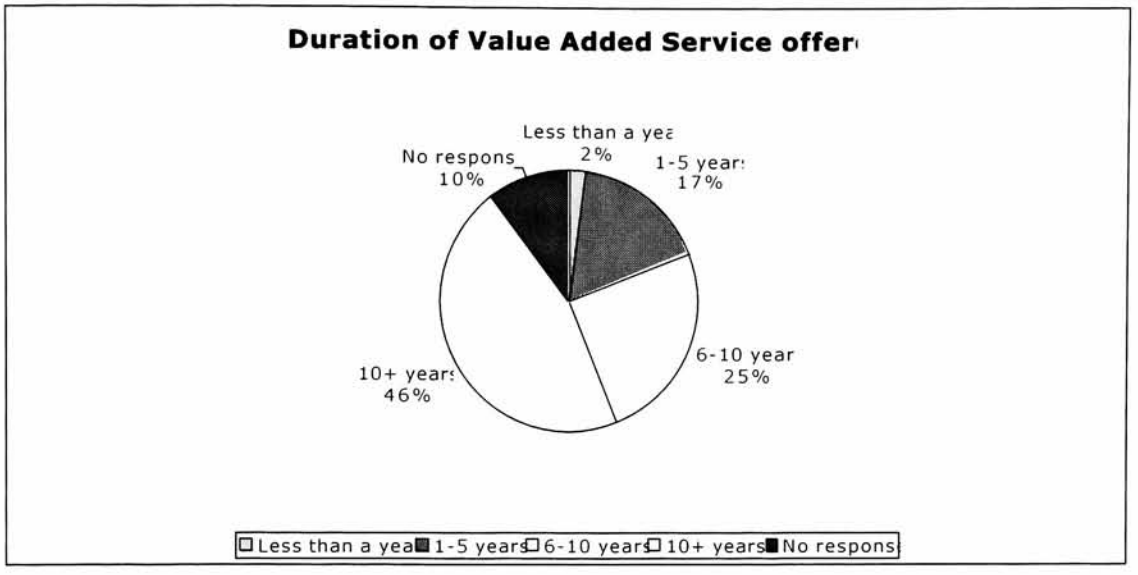

Figure 6. Duration of value-added service offered.

Figure 6 shows that most of our respondents have offered value-added services for more than 10 years (46%). Only 2% have offered it for less than a year, and 17% have for between one and five years.

There were no major trends identified in the strategy adopted to implement value-added services. In-house developments (29.2%) represented the most popular strategy used, followed by outsourcing (25.0%), acquisitions (20.8%), and partnerships (20.8%). Consequently, it appears that the strategy adopted is more of a preference rather than a trend.

Revenue expectations, as represented in Figure 7, could refer to losses, profits or break-even situations. The researchers felt that the respondents might have been hesitant to answer if asked direct questions pertaining to their profitability.

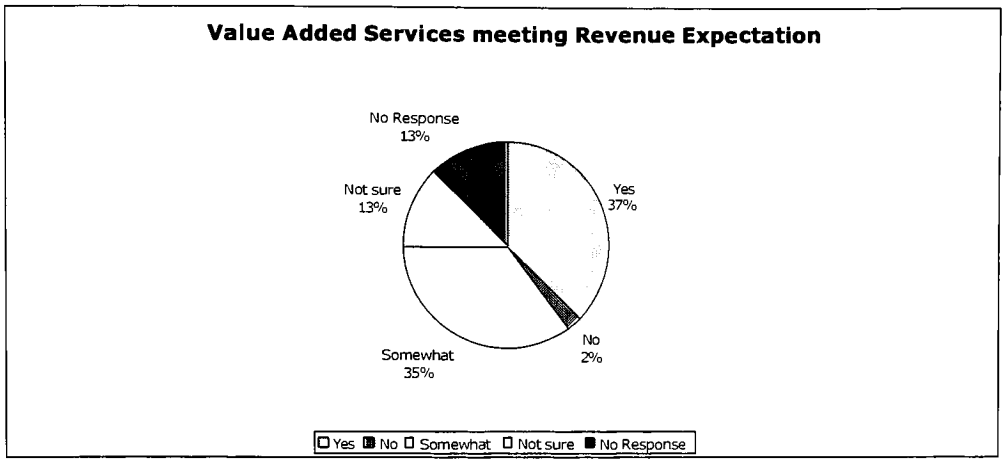

Figure 7. Value-added services meeting revenue expectations.

There appears to be similarity among the responses. While 37% said "yes" to whether value-added services met their revenue expectations, 35% said "somewhat." It is assumed that respondents referred to "somewhat" as revenue that was expected, but not entirely received.

Most respondents suggested that there was no one primary benefit to offering value-added services. The majority of respondents selected more than one option as the primary benefit. As such, there appeared to be some consistency amongst the data. A better value proposition (68.6%), followed by a stronger competitive position (66.7%), and recognition as a service provider (62.5%) were the most selected benefits. Differentiation (58.3%) and profitability (47.9%) followed.

An interesting point to note with regards to the primary benefit to offering value-added services to the customer is that the option selected as "customer benefits"

are truly what the company perceives to be the benefits they offer to their customers. As such it is not a true reflection of what the customer might perceive as a benefit. One-stop shopping (70.8%) was the primary customer benefit offered, followed by saving time (58.3%), cost reduction (50.0%), customer retention (45.8%), and consulting (36.9%).

Respondents were asked how customers were being charged for value-added services being offered. They had three options: fixed fee, variable fee (a fee depending on the job that needed to be done), and hybrid fee (a combination of fixed fee and variable fee). Fifty eight percent charged a hybrid fee, while 29.2% charged a variable fee. An insignificant percentage (4.9%) of the respondents charged a fixed fee (Figure 8). Respondents who selected the "other" option suggested that they used an all-inclusive price structure, or usually custom-quote their jobs.

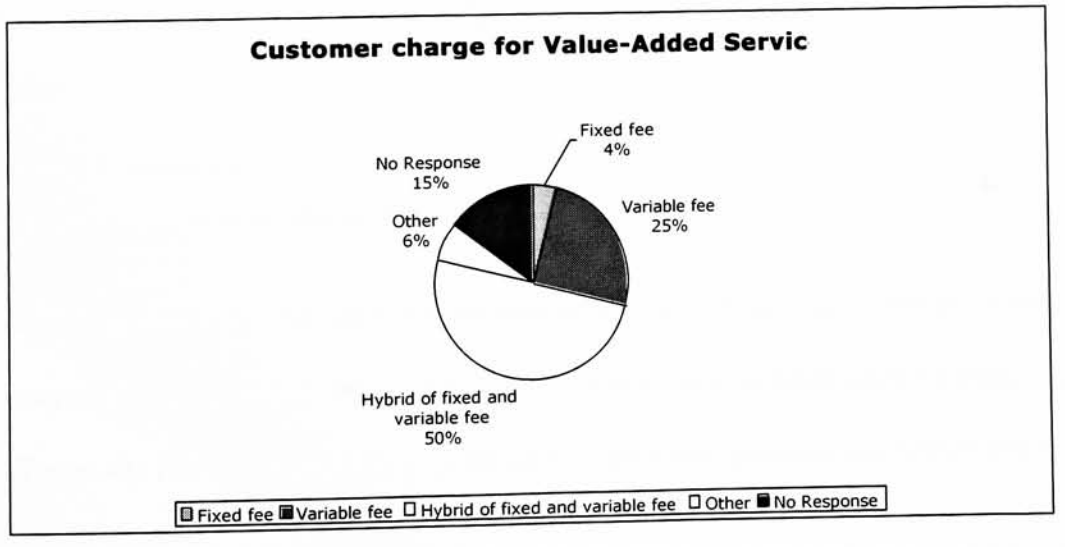

Figure 8. Customer charge for value-added services.

Fulfillment Services

From the inputs to the pilot survey, fulfillment was defined as "the ordering, sorting, managing, assembly and dispersion of product through activities such as kitting, providing personalized customer packages of a product or multiple product." Cummings and Gallagher (2003) suggest that there are three basic types of fulfillment: literature, product and Internet.

Figure 9 shows that the majority of respondents (68%) work for companies that offer fulfillment services.

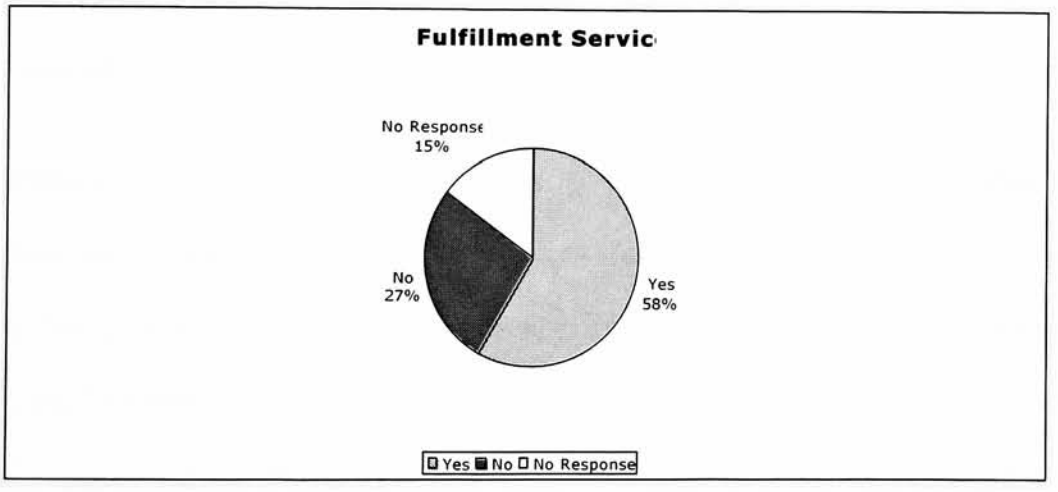

Figure 9. Respondents offering fulfillment services.

Respondents from the pilot survey indicated that kitting was a primary fulfillment service offered. There was a fairly even distribution of fulfillment services offered (Table 4). The most common fulfillment types were product and kitting fulfillment.

Since respondents were allowed to "check all that apply," it is probable that the respondents' companies offer multiple fulfillment services.

	In-house	Outsource
Internet	23%	2%
Kitting	31%	2%
Literature	25%	4%
Product	33%	6%
Other	8%	0%

Table 4. In-house versus outsourced fulfillment types.

The majority of those offering each of the specified fulfillment services do so internally as opposed to outsourcing to a third party vendor.

While 21% of the respondents indicated that the fulfillment service(s) offered by their companies were meeting revenue expectations, 42% elected not to respond to this question (Figure 10). Additionally, 25% indicated that fulfillment services were "somewhat" meeting revenue expectations, and 6% responded that they "were not sure" whether revenue expectations were being met. Only 6% indicated that the services were not meeting revenue expectations.

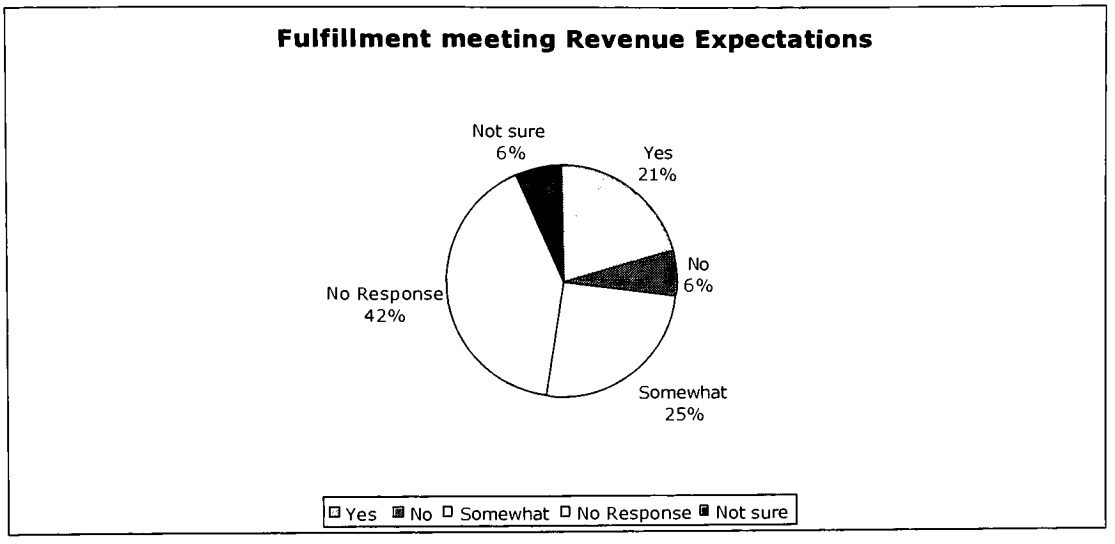

Figure 10. Fulfillment meeting revenue expectations.

Comments

Fulfillment, finishing, distribution and mailing are the most common services that respondents foresee their companies offering. A similar trend appeared in all responses. As one respondent summarized it: "More complete automated services, from design, the Internet, database management, image bank, e-commerce through to more intense variable data printing services and finishing/distribution or presentation of the product in the market place. We believe there will be a blurring of the lines between marketing and graphic arts production services that will draw 'commercial printers' into making marketing decisions for delivering 'critical' information or messages to the marketplace. The time to market this information will depend on whether or not companies can

produce, package and present information in the market place using various media very efficiently and effectively." In other words, companies will continue to offer value-added services in terms of market-driven solutions focused more on an automated workflow.

Almost 98% of respondents agreed that in order to remain competitive, printing companies would have to diversify their businesses by offering value-added services. Respondents suggested that there are numerous reasons for this trend. In order to survive and remain competitive, companies will have to diversify. Offering value-added services will be driven by customer demand. Customer loyalty is no longer in the equation. It is obvious that the printing industry is overwhelmed with excess capacity at the moment, and is shrinking in size. Print volume is decreasing as increasing electronic communications impacts the printing industry. Larger companies are able to make the necessary investments required in order to diversify and remain competitive. However, in order to survive, smaller companies that cannot afford the learning curve and investment, will have to see the advantage of merging with larger print providers.

Analysis and Findings

As customers continue to demand shorter turnaround times and improved quality, companies are being forced to adapt their business models to incorporate new strategies in order to remain competitive. Technology has played an imperative role in this transition. More and more customers are shifting

from traditional printers offering offset technology to those printers that are capable of offering digital printing for numerous reasons. Digital printing provides customers with additional options and advantages such as variable data printing, shorter runs, on-demand printing and acceptable quality.

To focus on the purpose of this research, commercial printers were classified into two specific categories. Conventional commercial printers are to those commercial printers that make use of traditional methods of producing print including letterpress, lithography, flexography and gravure printing. Digital commercial printers are those commercial printers that also use digital printing equipment to produce print.

It is critical to note that since most companies offer diversified services and products, the 'type of business' question prompted respondents to 'check all that apply'. As such there was some overlap in the data, where some respondents selected 'printer-conventional' and 'printer-digital' implying that they offer both digital and traditional commercial printing. The number of responses that were either 'printer-conventional' or 'printer-digital' was therefore insignificant to draw any valid conclusions. Consequently, no distinction was drawn between those respondents that selected both digital and conventional printing versus those that selected one option. Based on this grouping, of the 48 responses received, 17 selected 'printer-conventional' while 12 respondents selected 'printer-digital'

(these 12 respondents could have also selected 'printer-conventional' and thus be part of the 'printer-conventional' group).

The first two hypotheses focused on determining whether or not there is a positive correlation between the number of value-added services offered in-house and the size of the company. Due to the sample size, the Fisher Exact Test was used to test the hypotheses. For the purpose of conducting this test, the company size cut-off was set at 200 employees, since all but one conventional/digital commercial printer selected either the '200+' or '101-200' employees option. Thus, companies that employ more than 200 employees are considered larger companies while those companies that employ less than or equal to 200 are considered to be small. In addition, a total number of five value-added services were used as a cut-off point because conventional/digital commercial printers ranged from offering one to nine value-added services.

H_1: The number of value-added services offered in-house by digital commercial print companies will positively correlate with the size of the company.

H_{01}: The number of value-added services offered by digital commercial print companies will not positively correlate with the size of the company.

	Number of Value-Added Services Offered		
Company Size (Number of Employees)		**> 5**	**≤ 5**
	≤ 200	33%	17%
	> 200	25%	25%

Table 5. Digital commercial printers: company size versus number of value-added services.

Table 5 represents a summary of the test results *(refer to Appendix F: Detailed Statistical Test, Hypotheses 1)*. At a 95% level of significance, it can clearly be seen that there is no positive correlation between the size of the company and the number of value-added services offered. Based on the results, it is safe to state that there is almost no correlation between the two variables (number of employees and total number of value-added services). However, this test does not explore whether or not there is a negative correlation between the two variables.

Thirty three percent of digital commercial printing companies that employed less than or equal to 200 employees offered more than five value-added services, while 17% offered five or less value-added services. Similarly, 25% of digital commercial printing companies that employed more than 200 employees offered less than or equal to five value-added services, and 25% offered more than five value-added services.

Consequently, we fail to reject the null hypothesis, and concluded that the number of value-added services offered by digital commercial print companies will not positively correlate with the size of the company.

H_2: The number of value-added services offered in-house by conventional commercial print companies will positively correlate with the size of the company.

H_{02}: The number of value-added services offered by conventional commercial print companies will not positively correlate with the size of the company.

	Number of Value-Added Services Offered		
Company Size (Number of Employees)		**≤ 5**	**> 5**
	> 200	41%	24%
	≤ 200	14%	24%

Table 6. Conventional commercial printers: company size versus number of value-added services.

Table 6 depicts the summarized version of the test results *(*refer to *Appendix F: Detailed Statistical Test, Hypotheses 2)*. Similar to the results obtained at a 95% level of significance for digital commercial printers, there appears to be no positive correlation between the size of the company and the total number of value-added services being offered. In this instance, 24% of the large (employing greater than 200 employees) companies and 24% of the small companies (employing less than or equal to 200 employees) offered more than five value-added services. On the other hand, 41% of the large companies offered less than or equal to five value-added services, and only 14% of the small

companies offered less than or equal to five value-added services. Consequently there appears to be more of a possibility for a negative correlation compared to digital conventional printers.

Hence, we fail to reject the hypothesis and conclude that the number of value-added services offered by conventional commercial print companies will not positively correlate with the size of the company.

According to a survey conducted by TrendWatch (2004b), 22% of respondents cited broadening fulfillment, shipping, and mailing capabilities as top sales opportunities. The NAPL *2002-2003 State of the Industry Survey* suggests that nearly 70% of respondents plan to offer fulfillment and/or mailing services in the coming 12-18 months. As such, fulfillment offered as a value-added service is further explored in the next two hypotheses, in an attempt to validate secondary research gathered. It is being assumed, in both instances, that fulfillment is the most popular offered value-added service. In addition, for both hypotheses, in-house and outsourced services have been combined to solely determine whether or not the value-added service is being offered.

H_3: The most frequent value-added service offered by digital commercial printers is fulfillment.

H_{03}: Fulfillment is not the most frequent value-added service offered by digital commercial printers.

Digital Commercial Printers: Most frequently offered value-added services	
Type of Service	**Number of Companies**
E-commerce	11
Fulfillment	***10***
Mailing	10
Finishing	10
Data asset management	9
Variable data printing	8
Consulting	6
Distribution	6
Print on demand	6

Table 7. Digital commercial printers: most frequently offered value-added services.

Table 7 displays a list of the value-added services in descending order of the most frequent value-added service offered. In fact, fulfillment was not the most frequent value-added service offered by digital commercial printers. It does however seem appropriate to note that the top position held by e-commerce is only ahead of fulfillment by a margin of one responding company.

Thus, we fail to reject the null hypothesis and conclude that fulfillment is not the most frequent value-added service offered by digital commercial printers.

H_4: The most frequent value-added service offered by conventional commercial printers is fulfillment.

H_{04}: Fulfillment is not the most frequent value-added service offered by conventional commercial printers.

Conventional Commercial Printers: Most frequently offered value-added services	
Type of Service	**Number of Companies**
Data asset management	16
E-commerce	15
Fulfillment	***15***
Finishing	11
Variable data printing	10
Distribution	9
Mailing	9
Print on demand	9
Consulting	8

Table 8. Conventional Commercial printers: Company size versus number of value-added services.

Table 8 reflects the most frequent value-added services offered by conventional commercial printers. Data asset management is the most frequent value-added service offered, followed by e-commerce and fulfillment, both in second place. It is again worth noting that the difference between the most frequent value-added service data asset management, the second most frequent service, fulfillment

and e-commerce, is also just one response. Hence, we fail to reject the null hypothesis, and conclude that fulfillment is not the most frequent value-added service offered by conventional commercial printers.

Chapter 6

Summary and Conclusions

Conclusions

Implications: Demographics

Due to the two different sample populations being used, Finishing Resources Inc., primarily composed of commercial printers and trade finishers, and Binding Industry of America, primarily made up of trade finishers and equipment suppliers, the majority of respondents that selected "other" for type of business were equipment suppliers. A large (over 50%) percentage of the respondents were senior managers (presidents, vice presidents and directors) with more than 11 years of experience in the industry.

Over 50% of companies employed more than 50 people, reflecting the current trend in the industry. More small companies are geared towards or forced to consolidate and merge with large companies in order to survive (Paparozzi, 2004). Similarly, large companies are acquiring small companies with the intentions of offering a larger variety of services. This is primarily due to the large investments required in order to implement value-added services that most small companies cannot afford (Paparozzi, 2004). This trend is supported by the results: 29% of respondents adopted in-house development as the primary strategy for implementing value-added services. In addition, it was discovered

that value-added services are rarely outsourced. Our responses suggest that some companies must be using more than one strategy to implement value-added services.

Implications: Value-added services

Most companies have been offering value-added services for over 10 years. Perhaps the terminology "value-added services" is new, but the concept has been around for years. It also appears that offering these services directly relates to the marketing of the company. It is by providing these services that the company is able to distinguish itself from its competitors (Dodd and Lavelle, 2004).

The monetary repercussions of implementing and providing value-added services are still unclear. The survey asked respondents whether revenue expectations were being met or not. However, it is unknown how respondents interpreted revenue expectations. They could have been defined as break-even, sustained growth, minimal or increased revenues, or even accepting a loss. In addition, it is unclear at which stage of implementation the revenue expectations were met. Thirteen percent of respondents did not respond when asked if the fulfillment services they offered met revenue expectations, while 42% did not respond to value-added services meeting revenue expectations. These percentages were higher than expected, especially considering the demographic profile of the sample.

The value-added services list we provided to respondents was based on the latest trends within the industry. Consequently, most of the value-added services listed were technology-based. However, value-added services are not limited to the list provided. Some people might perceive prepress as a value-added service. Industry trends suggest that as more and more companies offer value-added services, those value-added services will commoditize. Consequently it is recommended that new value-added services need to be developed and offered in order to sustain competitiveness.

Current industry research suggests that fulfillment is the number one value-added service being offered (Paparozzi, 2004). However, based on the responses we received, e-commerce (71%) was the number one service currently being offered, followed by fulfillment.

Digital commercial printers versus conventional commercial printers

There does not appear to be a significant difference between digital commercial printers and conventional commercial printers. It appears that the number of value-added services offered is likely to be dependent on other factors such as the business model adopted, and business strategies implemented. There appears to be no positive correlation between the size of a company in terms of employment and the number of value-added services it offers. However, failing to reject the null hypotheses does not imply that there is a negative correlation.

Based on the frequency list of value-added services for both conventional commercial printers and digital commercial printers, there appears to be a consistent trend amongst both types of printers. E-commerce appears in the top three of both printer lists. It is believed that this is a result of e-commerce being defined differently by different people. Also, it is further concluded that e-commerce has become a necessity in most businesses and therefore can no longer be interpreted as a value-added service. Amongst the top five, data asset management and finishing appear to be common. This appears to be consistent with the trend towards automation. Companies are beginning to focus increasingly on finishing, bringing it in-house and viewing it as a value-added service profit center in its own right. In addition, companies are creating new direct communication channels throughout the value chain, 'creating a clear window' between the printer and customer by adopting technologies such as e-commerce. Despite fulfillment not being the most frequent value-added service offered, it was identified that those respondents who do offer fulfillment provide the service in-house. This is consistent with the trend where more and more companies are attempting to provide customers with a one-stop shopping service.

Summary and Recommendations

Printers can no longer hope for a rise in profits as the economy prospers (Papaprozzi, 2004). Growth trends in the economy no longer solely coincide with

the printing industry growth. Vigorous competition and vagaries of the economic climate are forcing companies to adopt value-added strategies that will help them distinguish themselves from their competitors. Since implementing such strategies generally requires large investments, most small companies are merging with larger companies in order to survive, while large companies are acquiring small companies that serve niche markets. Consequently the printing industry is shrinking (Paparozzi, 2004).

Adding value is one of those buzz phrases, like the now ubiquitous "solutions provider" that has numerous meanings and can be misused at times. Although most companies are aware of the "service-oriented" trend, few have successfully managed to implement value-added services as an integrated solution. However, it is something that all printers are being forced to do in order to retain and gain customers, in a market where print has become merely a commodity (Dodd and Lavelle, 2004).

Companies are trying to offer customers a one-stop shopping service. In doing so, many specialty services are being brought in-house. Services such as finishing and distribution that were previously considered an afterthought are now being seen as value-added services. Fulfillment is currently considered the top value-added service in the industry, although our research showed that it was near the top, but not necessarily the most frequently used value-added service.

In addition, technology-based services are improving efficiencies and forcing companies to change their business models.

As companies continually develop and discover methods and services that will help distinguish them from their competitors, a standard business model is yet to be discovered and implemented. In addition, with continuous price increases in raw materials such as inks and substrates, as well as requirements for a more specialized labor workforce and customers becoming increasingly demanding, companies are being forced to re-evaluate their business models (Wilson, Gentile, and GATF Staff, 2002). There still seems to be fuzziness as to how companies are to charge customers for services that are being offered. According to Carson (1998) maybe the lesson there is that adding value rather than offering unsustainable prices is the key to developing the long-term partnerships that will be positive for printer and customer alike.

Based on the hypotheses findings, it appears that companies are not offering value-added services because they can, but rather based on the demand for them. Also, there seems to be an increasing trend towards technological change and automation. This is likely a result of an increasing demand for shorter turnaround times.

Despite internal and external challenges in printing companies, there is considerable potential for added-value printing techniques. It is suggested that

companies need to think more scientifically and see themselves as "one with their clients", providing solutions rather than products.

Future Research

Industry trends suggest that the only way companies can remain competitive is by offering value-added services. While this research could have been exhaustive, only various aspects were explored on an introductory level, in order to minimize the length of the survey. Many aspects of this research could be explored in greater detail.

The following topics emerged as opportunities for further research:

1. *Profitability* - As indicated in the research findings, it is not clear whether the positive revenue expectations indicated equate with the profitability of fulfillment or value-added services in general. Thus, it may be feasible that the next phase of this research focus on determining the true profitability generated from a specific value-added service. Additionally, it is important to determine whether the services that are offered are separate business units/cost centers. In other words, are value-added services offered as a temporary or bundled service, or as services that are strategically implemented?
2. *Marketing Strategy* - Another area of interest associated with the strategic implementation of value-added services is whether or not companies have designed formal marketing programs/strategies to promote this capability.

3. *Distribution Workflow*- Focused research on distribution in the printing industry would help add to the dearth of literature on this topic. During the secondary research process, it was discovered that limited information has been published on the topic of distribution workflow within the printing environment. Thus a future research study on topics such as physical distribution (workflow, trends, challenges, internal, external), and the impact of electronic distribution (distribute-and-print) and print-on-demand on traditional print distribution operations would be beneficial.
4. *E-commerce as a value-added service* – As indicated in the research findings, current research does not coincide with the findings discovered pertaining to fulfillment being the number one value-added service currently being offered. This might be a result of e-commerce being interpreted differently by different people.

Other issues that could be further explored include:

5. How does a company decide which value-added service is to be offered, and what role does the value-chain have on the decision-making process?
6. How have PEST (Political, Economical, Social and Technological) factors evolved and changed in terms of impacting a print company's decision?
7. What role does the print buyer have, as a consequence of implementing value-added services such as e-commerce?
8. The unique selling value proposition (USP) of the company changes when value-added services are being offered. How will this affect the sales

force, since sales people are expected to be completely aware of the service aspects of the product being offered?

As the economy and business dynamics continue to evolve, more and more companies will continually change their business models, embracing trends that will help them survive and remain competitive. Companies will have to continually find and offer new services throughout the value chain as methods that will ultimately add value to the final product, and enable them to remain competitive.

Glossary

CIP4: an international, worldwide operating standards body located in Switzerland.

CTP: computer-to-plate prepress technology. It eliminates the use of negatives and positives.

Conventional commercial printers: those commercial printers that make use of traditional methods of producing print, including letterpress, lithography, flexography and gravure printing.

DAM: digital asset management. It is a system that creates a centralized repository for digital files that allows the content to be archived, searched and retrieved.

Digital commercial printers: those commercial printers that make use of digital printing equipment to produce print.

Diversified services: services other than the primary service offered, such as adding a web press to a sheetfed operation.

E-commerce: the means of selling goods on the Internet, using web pages.

E-documents: documents that are available in an electronic format such as PDF.

Fisher Exact Test: a statistical test for 2 x 2 tables that is used when members of two independent groups can fall into one of two mutually exclusive categories. This test is typically used when the sample size is less than 30.

Gross Domestic Product (GDP): the total market value of all final goods and services produced in a country in a given year, equal to total consumer, investment and government spending, plus the value of exports, minus the value of imports.

Graphic communications industry: the processes and industries that create, develop, produce and disseminate products utilizing or incorporating words or pictorial images to convey information, ideas and feelings.

JDF: job definition format. A standard that is based on XML.

Mini tab: a statistical software package used to analyze data statistically.

Print on Demand (POD): new digital printing techniques used to publish small print runs of books (often a single copy) on demand.

Statistical Package for Social Science (SPSS): a statistical software package used to analyze data statistically.

SWOT analysis: (strengths, weaknesses, opportunities, and threats) a tool used to provide a general or detailed snapshot of a company's health.

Unique selling proposition (USP): an advertising formula that focuses on what makes the product unique.

Value-added services (VAS): also referred to as diversified services. Any non-print graphic communications-related services.

Variable data printing: those printed products where information on each page of a print run is varied.

XML: (extensible mark-up language) a programming language.

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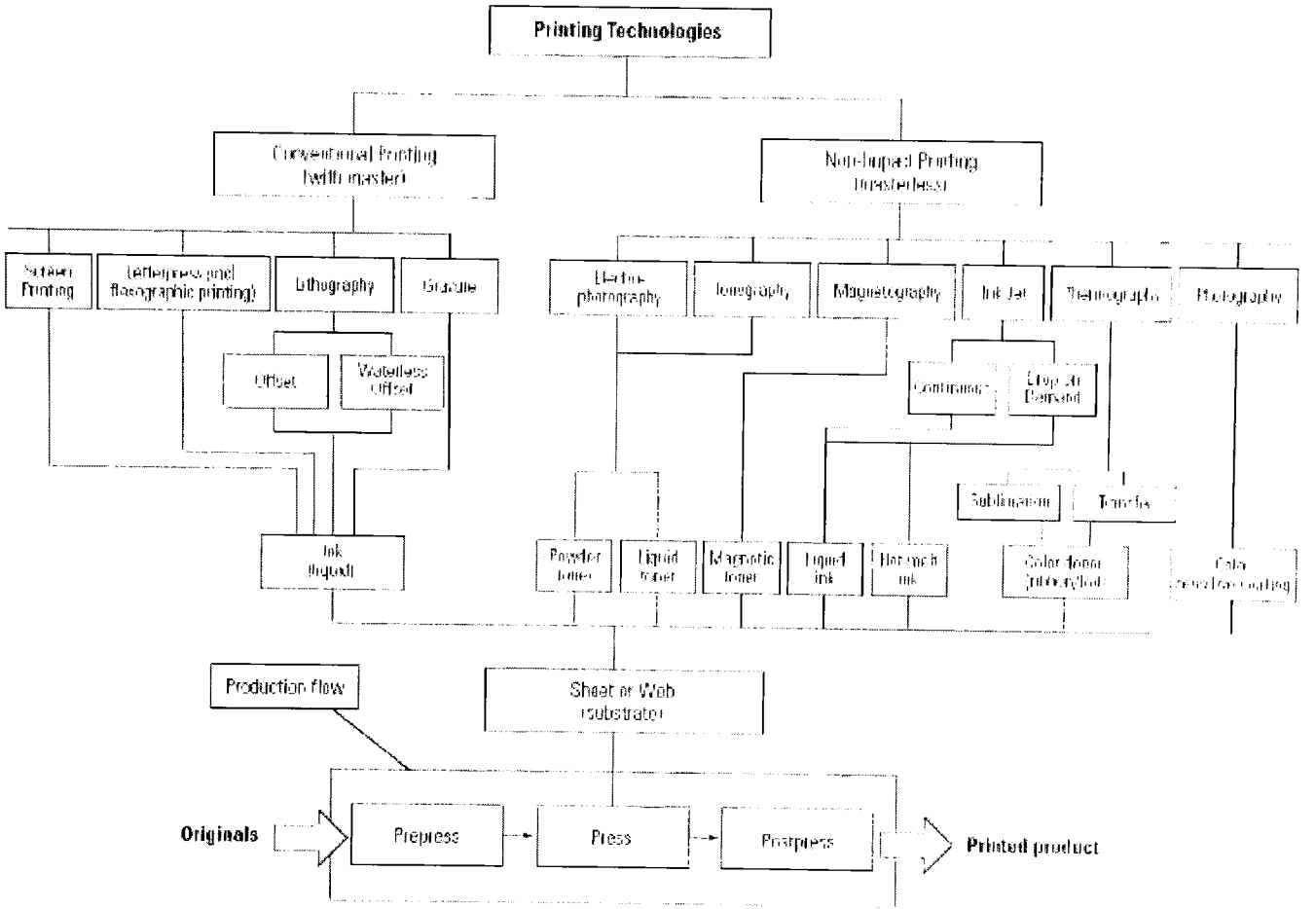
Appendix A

Types of Printing Technologies (Kipphan, 2001, p.42)



Appendix B
Summary of Pilot Survey Results

1. A summary of the results follows. Note: For several questions respondents were instructed to "check all that apply" therefore in most cases total percentage exceeds 100.

    a. Demographics

    The majority of the respondents worked in finishing businesses (70%), followed by conventional printers (41%), fulfillment houses (39%), prepress houses (39%), digital printers (34%), and equipment suppliers (26%).

    The markets served directly correlated with the type of business. The sample was composed of 82% commercial printers, 32% specialty, 31% packaging, 27% other, 26% forms and labels and 21% trade services.

    Additionally, 54% of the sample was made up of large companies employing 200 and above employees.

    b. Value-Added Services

Respondents were asked to define value-added services. The major theme from those who responded to this question was that it is the process of creating one-stop shopping for customers. Forty-one percent of the respondents stated that they have been offering value-added services for more than 10 years.

The majority of the value-added services were offered in-house. The primary services were: consulting – 34%, data asset management – 33%, distribution – 54%, e-commerce – 26%, finishing – 61%, fulfillment – 49%, mailing – 49%, print on demand – 41%, variable data printing – 39%, and web to print – 39%. The primary reasons selected for offering these services were competitive advantage (54%), followed by strategic decision (54%) and requested by customer (43%).

In terms of revenue, 29% respondents claim that offering these services are meeting revenue expectations. It is unclear whether these expectations are positive or negative.

c. Fulfillment

Forty-six percent of the respondents offered fulfillment as a service. The majority is offered in-house (product – 39%, Internet – 25%, literature – 21%). However, only 22% claim that the service is meeting revenue expectations.

Appendix C

The Finishing and Distribution Industry Status Survey

Finishing and Distribution Industry Status Survey

Today's printing industry is in a state of transition. It has become an industry that no longer relies on print for sustainability. Thus, printers as well as print service providers are incorporating different strategies into their business models to provide the desired services that customers now require to meet their business goals.

This survey is being conducted in order to gain information on the current industry status of finishing, distribution and value-added services offered by printers. It is comprised of five sections: demographic profile, industry business trends in finishing and distribution, value added services, fulfillment services, and comments.

A. Demographic Profile

1. Type of Business
   - ☐ Prepress
   - ☐ Printer-Conventional
   - ☐ Printer-Digital
   - ☐ Finishing
   - ☐ Fulfillment
   - ☐ Full service print provider
   - ☐ In-plant
   - ☐ Other_____

2. Markets Served by Business *(Check all that apply)*
   - ☐ Commercial printing (catalogs, newspapers and magazines)
   - ☐ Forms & labels
   - ☐ Packaging (flexible and rigid containers)
   - ☐ Mailing services
   - ☐ Trade services (bindery, finishing and distribution)
   - ☐ Other_____

3. Number of Employees at Business Location
   - ☐ Fewer than 20

- ☐ 21-50
- ☐ 51-100
- ☐ 101-200
- ☐ 200 +

4. Your Job Title/Position
   - ☐ President/CEO
   - ☐ Vice president
   - ☐ Director
   - ☐ Production manager
   - ☐ Finishing supervisor
   - ☐ Other_____

5. Years Employed in the Printing Industry
   - ☐ Fewer than 2 years
   - ☐ 2-5 years
   - ☐ 6-10 years
   - ☐ 11-16 years
   - ☐ 16 + years

B. Industry Business Trends in Finishing and Distribution

1. What standard finishing services does your company offer?

Service	In-House	Outsourced
Binding	☐	☐
Die cutting	☐	☐
Embossing	☐	☐
Foil stamping	☐	☐
Folding	☐	☐
Gluing	☐	☐
Stitching	☐	☐
Other (specify below)	☐	☐

Other(s)_____ _____

2. How have *finishing processes* improved/evolved in your company over the past 10 years?

(Check all that apply)

- ☐ Automation
- ☐ Increased productivity
- ☐ Waste reduction
- ☐ Other(s)_____

3. How has *finishing management* improved/evolved in your company over the past 10 years?

(Check all that apply)

- ☐ Employee empowerment and teamwork
- ☐ Improved project management
- ☐ Improved hiring, training and retention
- ☐ Improved communication
- ☐ Other(s)_____

4. How have distribution processes and procedures evolved in your company over the past 10 years? *(Check all that apply)*

- ☐ Automation
- ☐ Increased productivity
- ☐ Shorter delivery times
- ☐ Other(s)_____

C. Value-Added Services

Value-added services could be described as those services that offer customers a "one-stop shopping" solution that increases the value of the product offered, by promoting efficiency and reducing customer costs.

1. What value-added services does your company offer? If *none*, go to *Section D.* *(Check all that apply)*

Service	In-House	Outsourced
Consulting	☐	☐
Data Asset Management	☐	☐
Distribution	☐	☐
E-commerce	☐	☐
Finishing	☐	☐
Fulfillment	☐	☐
Mailing	☐	☐
Print on Demand	☐	☐
Variable Data Printing	☐	☐
Web to Print	☐	☐
Other *(specify below)*	☐	☐

Other(s) _____

2. Why did your company decide to offer these services?
   - ☐ Competitive advantage
   - ☐ Requested by customer(s)
   - ☐ Strategic decision
   - ☐ Other(s)_____

3. How long has your company offered value added services?
   - ☐ Less than 1 year
   - ☐ 1-5 years
   - ☐ 6-10 years
   - ☐ 10+ years

4. What was the primary strategy used to integrate these services into the existing business workflow?
   - ☐ Acquisitions
   - ☐ Partnerships/Joint ventures
   - ☐ Outsourcing
   - ☐ In-house development
   - ☐ Other(s)_____

5. Are the value added services that your company offers meeting revenue expectations?

- ☐ Yes
- ☐ No
- ☐ Somewhat
- ☐ Not sure

6. What is the primary benefit your company receives from offering these services?

- ☐ Differentiation from competitors
- ☐ Increased company profitability
- ☐ Increased value proposition to customer
- ☐ Recognition as a solutions provider
- ☐ Stronger competitive position
- ☐ Other(s)_____

7. What is the primary benefit your *customer* receives from these services? *(Check all that apply)*

- ☐ Consulting services
- ☐ Cost reductions
- ☐ Customer retention
- ☐ One-stop shopping
- ☐ Saves time and eliminates/minimizes frustration
- ☐ Other(s)_____

8. How do you charge your customer for the value-added services your company provides?

- ☐ Fixed fee
- ☐ Variable fee
- ☐ Hybrid of fixed and variable fee
- ☐ Other(s)_____

D. Fulfillment Services

Fulfillment can be described as the ordering, storing, managing, assembly and dispersion of products through activities such as kitting, providing personalized customer packages of a product or multiple products.

1. Does your company offer any fulfillment services? If no, go to section E.
   - ☐ Yes
   - ☐ No

2. If *yes*, what types of fulfillment services are offered? *(Check all that apply)*

Service	In-House	Outsourced
Internet	☐	☐
Kitting	☐	☐
Literature	☐	☐
Product	☐	☐
Other *(specify below)*	☐	☐

Other(s)_____

4. Are the fulfillment services that your company offer meeting revenue expectations?
   - ☐ Yes
   - ☐ No
   - ☐ Somewhat
   - ☐ Not sure

E. Comments

1. Does your company see finishing and distribution as a growth opportunity in the future? If yes, how?

☐ Yes
☐ No

_____
_____
_____

2. What value added services do you see your company offering in the future?

_____
_____
_____

3. In order to remain competitive will more printing companies diversify their businesses by offering value added services? Explain your response.

☐ Yes
☐ No

_____
_____
_____
_____
_____

Appendix D

The Finishing and Distribution Industry Status Survey Coding Key

Each field was recorded in the Excel spreadsheet with the letter representing a response. 'Yes' was coded as a '1' and a 'No' was coded as a '2'. A 'No Response' was coded as a '0'. Numbers were also used for the radio button option where only one option could be selected.

A. Demographic Profile

1. Type of Business
   - ☐ Prepress a
   - ☐ Printer-Conventional b
   - ☐ Printer-Digital c
   - ☐ Finishing d
   - ☐ Fulfillment e
   - ☐ Full service print provider f
   - ☐ In-plant g
   - ☐ Other h _____ i

2. Markets Served by Business *(Check all that apply)*
   - ☐ Commercial printing (catalogs, newspapers and magazines) a
   - ☐ Forms & labels b
   - ☐ Packaging (flexible and rigid containers) c
   - ☐ Mailing services d
   - ☐ Trade services (bindery, finishing and distribution) e
   - ☐ Other f _____ g

3. Number of Employees at Business Location
   - ☐ Fewer than 20 1
   - ☐ 21-50 2
   - ☐ 51-100 3
   - ☐ 101-200 4
   - ☐ 200 + 5

4. Your Job Title/Position

- ☐ President/CEO 1
- ☐ Vice president 2
- ☐ Director 3
- ☐ Production manager 4
- ☐ Finishing supervisor 5
- ☐ Other 6 _____ b

5. Years Employed in the Printing Industry

- ☐ Fewer than 2 years 1
- ☐ 2-5 years 2
- ☐ 6-10 years 3
- ☐ 11-16 years 4
- ☐ 16 + years 5

B. Value-Added Services

Value-added services could be described as those services that offer customers a "one-stop shop" solution that increases the value of the product offered, by promoting efficiency and reducing customer costs.

1. What value-added services does your company offer? If *none*, go to *Section D.* *(Check all that apply)*

Service	In-House	Outsourced
Consulting	☐ a	☐ b
Data Asset Management	☐ c	☐ d
Distribution	☐ e	☐ f
E-commerce	☐ g	☐ h
Finishing	☐ i	☐ j
Fulfillment	☐ k	☐ l
Mailing	☐ m	☐ n
Print on Demand	☐ o	☐ p
Variable Data Printing	☐ q	☐ r
Web to Print	☐ s	☐ t
Other *(specify below)*	☐ u	☐ v

Other(s) _____

2. Why did your company decide to offer these services?
   - ☐ Competitive advantage a
   - ☐ Requested by customer(s) b
   - ☐ Strategic decision c
   - ☐ Other(s) d

   _____ e

3. How long has your company offered value added services?
   - ☐ Less than 1 year 1
   - ☐ 1-5 years 2
   - ☐ 6-10 years 3
   - ☐ 10+ years 4

4. What was the primary strategy used to integrate these services into the existing business
workflow?

- ☐ Acquisitions a
- ☐ Partnerships/Joint ventures b
- ☐ Outsourcing c
- ☐ In-house development d
- ☐ Other(s) e

_____ f

5. Are the value added services that your company offers meeting revenue expectations?

- ☐ Yes 1
- ☐ No 2
- ☐ Somewhat 3
- ☐ Not sure 4

6. What is the primary benefit your company receives from offering these services?

- ☐ Differentiation from competitors a
- ☐ Increased company profitability b
- ☐ Increased value proposition to customer c
- ☐ Recognition as a solutions provider d
- ☐ Stronger competitive position e
- ☐ Other(s) f

_____ g

7. What is the primary benefit your *customer* receives from these services? *(Check all that apply)*

- ☐ Consulting services a
- ☐ Cost reductions b
- ☐ Customer retention c
- ☐ One-stop shopping d
- ☐ Saves time and eliminates/minimizes frustration e
- ☐ Other(s) f

_____ g

8. How do you charge your customer for the value-added services your company provides?

- ☐ Fixed fee 1
- ☐ Variable fee 2
- ☐ Hybrid of fixed and variable fee 3

☐ Other(s) 4

_____ b

C. Fulfillment Services

Fulfillment can be described as the ordering, storing, managing, assembly and dispersion of products through activities such as kitting, providing personalized customer packages of a product or multiple products.

1. Does your company offer any fulfillment services? If no, go to section E.
   - ☐ Yes 1
   - ☐ No 2

2. If *yes*, what types of fulfillment services are offered? *(Check all that apply)*

Service	In-House	Outsourced
Internet	☐ a	☐ b
Kitting	☐ c	☐ d
Literature	☐ e	☐ f
Product	☐ g	☐ h
Other *(specify below)*	☐ i	☐ j

Other(s)_____ k

4. Are the fulfillment services that your company offer meeting revenue expectations?
   - ☐ Yes 1
   - ☐ No 2
   - ☐ Somewhat 3
   - ☐ Not sure 4

D. Comments

2. What value added services do you see your company offering in the future?

_____
_____
_____

3. In order to remain competitive will more printing companies diversify their businesses by offering value added services? Explain your response.

☐ Yes 1
☐ No 2

_____
_____
_____
_____
_____ b

Appendix E

A Summary of the Data Gathered

The full survey results are listed in the forthcoming table. They are provided in the order in which they were asked. A total of 48 responses were received. Open ended questions, along with the responses provided for "other" are discussed in monograph survey results discussion.

Questions	n=48	
Section A- Demographic Profile		
1a. Type of Business (multiple responses allowed)	**Total**	
Prepress	29.2%	
Printer- Conventional	37.5%	
Printer- Digital	27.1%	
Finishing	64.6%	
Fulfillment	31.3%	
Full service print provider	41.7%	
In-plant	18.8%	
Other	29.2%	
2a. Markets Served by Business (multiple responses allowed)		
Commercial printing (catalogs, newspapers and magazines)	64.6%	
Forms & labels	27.1%	
Packaging (flexible and rigid containers)	22.9%	
Mailing services	47.9%	
Trade services (bindery, finishing and distribution)	52.1%	
Other	4.2%	
3a. Number of Employees at Business Location		
Fewer than 20	11.1%	
21-50	11.1%	
51-100	17.7%	
101-200	17.7%	
200 +	42.2%	

Non-responses	3	
4a. Your Job Title/Position		
President/CEO	30.2%	
Vice president	20.9%	
Director	7.0%	
Production manager	4.7%	
Finishing supervisor	9.3%	
Other	27.9%	
Non-responses	5	
5a. Years Employed in the Printing Industry		
Fewer than 2 years	2.2%	
2-5 years	0%	
6-10 years	2.2%	
11-16 years	13.3%	
Over 16 years	82.2%	
Non-responses	3	
Section C. Value-Added Services		
1c. What value-added services does your company offer? (check all that apply)	In-house	Outsourced
Consulting	31.3%	4.2%
Data Asset Management	54.2%	2.1%
Distribution	20.8%	0%
E-commerce	70.8%	0%
Finishing	52.1%	4.2%
Fulfillment	54.2%	6.3%
Mailing	25.0%	4.2%
Print on Demand	29.2%	2.1%
Variable Data Printing	22.9%	2.1%
Web to Print	4.2%	0%
Other	6.3%	0%
2c. Why did your company decide to offer these services? (multiple responses allowed)		
Competitive advantage	64.6%	
Requested by customer(s)	54.2%	
Strategic decision	62.5%	
Other	6.3%	

3c. How long has your company offered value-added services?		
Less than 1 year	2.3%	
1-5 years	18.6%	
6-10 years	27.9%	
Over 10 years	51.2%	
Non-responses	5	
4c. What was the primary strategy used to integrate these services into the workflow? (multiple responses allowed)		
Acquisitions	20.8%	
Partnerships/Joint ventures	18.8%	
Outsourcing	25.0%	
In-house development	29.2%	
Other	0%	
5c. Are the value-added services that your company offers meeting revenue expectations?		
Yes	42.9%	
No	2.3%	
Somewhat	40.5%	
Not sure	14.3%	
Non-responses	6	
6c. What is the primary benefit(s) that your company receives from offering these services? (multiple responses allowed)		
Differentiation from competitors	58.3%	
Increased company profitability	47.9%	
Increased value proposition to customer	68.6%	
Recognition as a solutions providers	62.5%	
Stronger competitive position	66.7%	
Other	2.1%	
7c. What is the primary benefit your customers receive from these services? (check all that apply)		
Consulting services	39.6%	
Cost reductions	50.0%	
Customer retention	45.8%	

One-stop shopping	70.8%	
Saves time/minimizes frustration	58.3%	
Other	4.2%	
8c. How do you charge for the value-added services?		
Hybrid	58.5%	
Variable	29.2%	
Fixed	4.9%	
Other	7.3%	
Section D- Fulfillment Services		
1d. Does your company offer any fulfillment services? (if no, go to section e)		
Yes	68.3%	
No	31.7%	
Non-responses	7	
2d. If yes, what types of fulfillment services are offered? (n=28)	In-house	Outsourced
Internet	22.9%	2.1%
Kitting	31.3%	2.1%
Literature	25.0%	4.2%
Product	33.3%	6.3%
Other	8.3%	0%
3d. Are fulfillment services that your company offers meeting revenue expectations?		
Yes	35.7%	
No	42.9%	
Somewhat	10.7%	
Unsure	10.7%	
Non-responses	20	
Section E- Comments		
3e. In order to remain competitive will more companies diversify by adding value-added services? (note, 2e is open-ended, so it was not included in this section)		
Yes	97%	
No	3%	
Non-responses	8	

Appendix F

Detailed Statistical Test: Hypotheses 1

The Fisher Exact Test

Because of the small sample size, The Fisher Exact Test is the most powerful test that can be used. For company size, the cut-off at 200 employees was chosen because all but one conventional/digital commercial printer had either '101-200' employees or '200+' employees. For number of value-added services, '5' was used as the cutoff because conventional/digital commercial printers ranged from '1' to '9'.

Digital Commercial Printers

	Number of Value-Added Services			
		> 5	**= 5**	**Total**
Company Size (Number of employees)	**= 200**	4 = a	2 = A - a	6 = A
	> 200	3 = b	3 = B - b	6 = B
	Total	7 = a + b	5 = A + B - a - b	12 = A + B

A = B and a/A = b/B, Test Statistic: b = 3

3 > 1

Critical Region: At the .05 level of significance where A = 6, B = 6, a = 4, we reject the null hypothesis if b = 1

Therefore, at the .05 level of significance, we **fail to reject** the null hypothesis and conclude that the number of value-added services offered by digital commercial print companies will not positively correlate with the size of the company.

Appendix G

Detailed Statistical Test: Hypotheses 2

The Fisher Exact Test

Conventional Commercial Printers

	Number of Value-Added Services			
		= 5	**> 5**	**Total**
Company Size (Number of employees)	**> 200**	7 = a	4 = A - a	11 = A
	= 200	2 = b	4 = B - b	6 = B
	Total	9 = a + b	8 = A + B - a - b	17 = A + B

A = B and a/A = b/B

2>0

Test Statistic: b = 2

Critical Region: At the .05 level of significance where A = 11, B = 6, a = 7, we reject the null hypothesis if b = 0

Therefore, at the .05 level of significance, we **fail to reject** the null hypothesis and conclude that the number of value-added services offered by conventional commercial print companies will not positively correlate with the size of the company.